

NTD-Natchez Trace District

The car construction guidelines found in the Pinewood Derby Car Kit are adequate to build a pinewood derby car. The following construction rules are presented for those scouts that like to 'push the limits'. Please remember that each participant must be a registered Scout (Lion to Webelos) in the **Natchez Trace District (NTD)** of the Middle Tennessee Council (MTC) on race day. It is the responsibility of Pack Leaders to issue a copy of the annual car construction rules to all participants. Many Units purchase the cars for their scouts from fundraising moneys and place a copy of this form in each box before issue. A uniformed Scout must be present to register his "one" car to compete and receive awards.

Please use caution when viewing websites that claim to be "BSA® Approved". The Scouting pinewood derby is not an official activity of BSA. Each Unit may form their own construction rules remembering that winners of the Pack race must observe the District's rules of participation to enter the District race. Before a race, the Inspection Team inspects each car. The inspectors have the right to disqualify a Pinewood Derby car. Do Your Best!

Car Specifications

The car must be built from parts found in the "**Official Cub Scout Grand Prix Pinewood Derby Kit.**" This rule is strictly enforced. Basic Car Parts from other retailers are not acceptable (wood block, nails (axles), BSA wheels).

Width: Car width, including wheels, shall not exceed 2 3/4". The minimum width between the wheels is 1 3/4". This is to ensure clearance of the lane guides. The clearance limit also includes any weights that may be placed underneath the car.

Length: Overall length may not exceed 7". This includes any weights, decorative tail-pipes, wheels, etc.

Clearance: Minimum bottom clearance of the pinewood derby car is 3/8". This includes any weights that are placed on the bottom of the car. Overall height may not exceed 4".

Weight: **Total weight is not to exceed 5 ounces** (141.7grams). The car may be built up to a maximum weight by the addition of wood and/or types of metal, provided it is securely attached to the car body. Mercury and liquids may not be used. Do not tape the weights to the car! If anything falls off the car during the race, it remains off.

Wheels: Use Only the Official Scout Grand Prix Wheels and Axles Washers, bushings, wheel bearings, starting or springing devices, or "Hub Cap" style wheel coverings are not allowed. You may sand the wheel tread but must not remove any B.S.A. markings including all of the dotted treads around the circumference of the outside edge of the tires. **Each Independent Wheel's surface tread must be flat.** It is likely that all the car's wheels will not touch the track at the same time. This is normal. However, three wheels of the car must rest flat on a track surface during inspection. No other wheel changes are allowed that would change the original composition of the wheels (curving, carving, drilling, 'coning').

Axles: Each wheel must have one Official Scout Grand Prix Axle (nails from the BSA kit). You may insert/glue the pinewood derby axles into the block's pre-cut slots or you may drill axle holes in the car. If you drill axle holes, each hole should be a similar distance from the bottom of the block compared to the pre-cut axle slots. You may also change the length of the wheelbase (the distance between front and rear axles). However, be sure that the wheels do not extend past the car block. The axle holes must be glued (pre-cut slot) or drilled into the original block of wood; no extensions. Angling axles or tipping wheels is not allowed. For a 3-wheel design, one axle hole may be drilled 1/16" higher than the other three axle holes. You may file, sand and polish the axles to remove blemishes, but do not alter the original shape of the axles (bending or 'notching'). **Use Only Dry Powder Lubrication.** Please do not use any other lubricant, especially oils and silicone sprays. Graphite must be applied only to the axle and inside the wheel hubs only. There will be no applications allowed inside the building as the powder is difficult to remove from the flooring.

Detailing: Detailing or Add-ons to the car are allowed only if the items do not exceed the width, length, weight, or clearance specifications. Add-ons must be permanently secured to the car body.

New Car: Each new year of racing requires a newly built car made from a new Grand Prix BSA kit. Previously built Pinewood Derby cars and parts are not acceptable. Each scout must submit the identical car that competed in the Pack Unit race of the same school year as the District Derby.

Car Design: Although Best Design cars are not entered into the speed race, please observe the clearance and width guidelines. 'Brand Name' designs are highly discouraged, especially food. All cars must still be new and constructed of BSA Grand Prix kit parts.

Procedures: The pinewood derby chairman will be contacting your Unit leader about two weeks before the District race. While the online registration is convenient, many Units complete the registration form months before the race. A racing roster can change dramatically over time. A scout must decide whether to enter his car in the speedster race or the best design competition beforehand. The track vendor only needs the names and Unit Number for the scouts that race. Best design scouts please register the morning of the race. During car inspection, each scout will present his car in uniform. If the car fails inspection, the Inspector will name the likely problem. We encourage every scout to try and fix the car but we insist he return to the end of the line to re-submit the car for inspection. If the car passes inspection, a numbered sticker is placed on the car and on the scout. The car is moved to an impound table where participants should not touch. When the competition begins, the Scout should listen for his car number. Most scouts will race about 4 to 5 times each Heat.
Derby Chairman

Participant Requirements:

1. A "uniformed" Scout and his "one" car must be present to register.
3. A scout must be present to race his car on the track and be present to receive recognition.
4. Each pinewood derby car entry must be the same one that competed in the Pack Unit's Pinewood Derby of the same school year of the current District race.

Rule Clarifications - *(Please Present This to Your Pack's Pinewood Derby Chairperson)*

The purpose of the District construction rules is simple: "broaden the playing field." This effect is best accomplished by restricting (filtering) modifications to the pinewood derby car wheels and axles. All other construction limits have been standard through the years. The District Chairperson is confident that the current set of construction rules allows significant flexibility for creating a speedy and creative design.

- 1.) **Each of the Wheels on the car must have a flat surface tread** - This does not say that all wheels must be flat on the track surface during inspection. This is referring to individual wheels. All wheels need to have a flat tread with BSA sidewall markings visible (barely in some cases). No other wheel changes are allowed that would change the original composition of the wheels: That means no curving, carving, drilling holes into and-or coning the wheels. This applies to all carving on the inside and outside of the wheels.
- 2.) **Clarification of Axle Rules:**
 - a. If desired, you may change the wheelbase (distance between front and rear axles).
 - b. The axle holes must be drilled into the original block of wood; no extensions are allowed.
 - c. Deliberately 'angling the axles' or 'tipping the wheels' is not allowed. However, one axle may be inserted in an axle hole that is slightly higher than the other three axles so long as the difference does not exceed 1/16 inch. During inspection, each of the three wheel treads must together be flat on the surface (track).
 - d. You can lightly sand and polish the axles removing blemishes. However, the original shape of the axles may not be altered. Straight axles go faster. Please do not bend your axles.
- 3) **"Do not remove any B.S.A. markings on both the inside and outside of the wheels"** is referring to the dotted molding marks around the circumference of the outside edges of each wheel tread.
- 4) **Use Only Dry Powder Lubrication.** "You may not use lubricant that have an oily and-or is a silicone spray. Dry powder must be applied only to the axle area. Please see that dry powder applications are applied only outside the building. The powder, especially the oily, silicone types of lubricant, are very difficult to remove from flooring/carpeting. There are several alternative venues in Williamson County that will not allow a pinewood derby in their building because of the stains left behind from a pinewood derby race. Every year, I am seeing cars with graphite all around the wheel tread. Excess or oily lubricants transpose to the track after a few races and can cause one lane to run faster than another. There is no need to lubricate your car other than the axles, wheel axle holes and the part of the body that the wheels touch.
- 5) **Each New Year of racing needs a newly built car** made from the Grand Prix BSA kit. Previously built Pinewood Derby cars and parts are not acceptable. Each scout must use the same car that competed in the most recent Pack Unit race of the year of the same school year. I know this is common sense, but there are people that do not understand.

A Cub Scout and his car must be present at the race to participate. There are no exceptions. Each Scout must present his car at the Inspection table, in a scouting uniform. The Scout should know his Pack Unit Number for registration.

Design Entry Cars

There are top place trophies for design. Best Design entries do not compete in the speedster race. If time permits before the race, the chairman will ask the scouts to fetch their car from the design table, form a single-file line, and walk around the pinewood derby track to show their car.

Best Design entry Construction Guidelines:

- Best Design creator may push the height and width of the derby car but not to be excessive. Please remember that parts from the BSA car kit must be used in the construction. Add-ons are allowed. The rest is up to the designer.
- **"Brand Name" designs are highly discouraged.** Examples that I have seen are mostly food related such as (Hershey, Planters, Oscar Myer). Perhaps this is an appropriate time to teach copyright guidelines. Usually one can build a car, but, leave off the brand name. Military designed cars are allowed.
- Each year brings a New Car Design. This is one reason why we take pictures of the cars each year.
- A creative designer still needs to use the basic car parts from the Grand Prix kit. Accessories (add-ons) are encouraged in designing. Please be sure all parts of the car are securely fastened.