



2021 PINEWOOD DERBY RULES - PACK 2214

Please read this document thoroughly

Every pack follows the same general set of rules. Our pack is focused on promoting car construction that is generally achievable by the Scout, with some degree of guidance and assistance from an adult. Younger Scouts will certainly need a good deal of assistance from an adult while older Scouts will rely more on guidance while doing most of the construction themselves. This is a great opportunity to bond with your child, teach your child about the safe use of various tools, and model the spirit of fair competition. Please keep in mind these character traits from the Scout Law while working with your child – a Scout is trustworthy and obedient. This is not a competition to see which parent can build the fastest car.

WIDTH, LENGTH and CLEARANCE:

1. Maximum overall width of the car including wheels and axles = $2\frac{3}{4}$ "
2. Minimum width between the wheels = $1\frac{3}{4}$ "
3. Minimum clearance between bottom of the car and track = $\frac{3}{8}$ "; if you put weights under your car, recess them in a hole under the car
4. Maximum car length = 7"; this measurement includes any additional decorations added to the car such as wings and spoilers
5. Wheelbase (distance between front and rear axles) must not be more than $4\frac{1}{2}$ "
6. To ensure proper alignment with the starting pin, most forward part of car must be at least $\frac{1}{2}$ " wide at the center
7. If you choose to add something to the top of the car, please refrain from adding more than a few inches to the overall height; the car will need to pass under a bar at the finish line

Note: Dimensions expressed in items 1-5 are the default dimensions of the official pinewood derby car that comes in the kit our Pack distributes to each Scout.

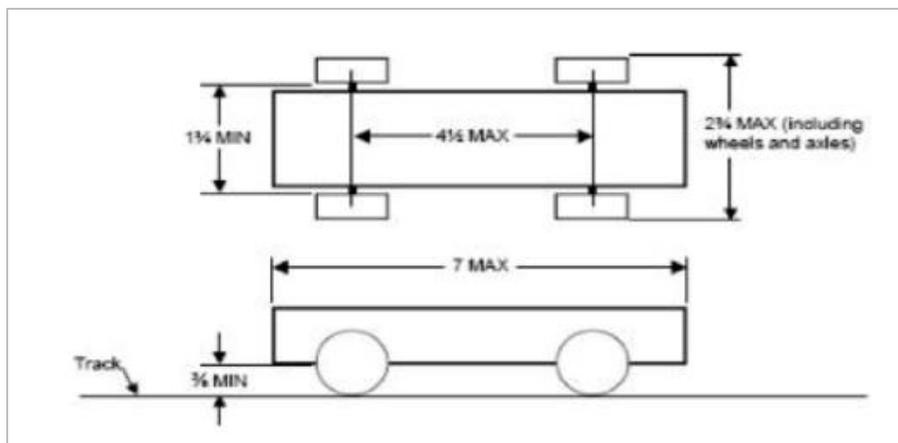


Figure 1: Pinewood Derby Car Required Dimensions

WEIGHT and APPEARANCE:

1. The car shall not exceed 5.0 ounces; the car may be hollowed out and built to the maximum weight by the addition of wood, metal, plastic, paint, or decals only, provided it is securely built into the body or firmly affixed to it; no loose materials of any kind are permitted in or on the car; mercury or lead must NOT be used in adding weight to the car (typical weights that you can buy commercially are made of zinc or tungsten; you can certainly use household items such as coins, washers, etc.)
2. Details and additions such as steering wheel, driver, spoiler, and decals are permitted as long as they do not cause the car to exceed the width, length and clearance specifications
3. Cars with wet paint or glue will not be accepted at registration or weigh-in
4. The official race scale that is used at car check-in to weigh each car shall be considered final; the same scale will be used to weigh every car

WHEELS, AXLES and LUBRICATION:

1. Only the wheels and axles provided with an official Cub Scout Pinewood Derby Car Kit can be used; no aftermarket substitutions; if you misplace or break one of these items please contact Pack leadership and we will work to get a replacement part to you
2. Four wheels must be used, one per axle – no more, no less; the *intention* is for all four wheels to touch the track; intentionally bending the axles or installing at an angle is prohibited
3. The wheels are the only part of the car that are allowed to touch the track
4. The wheels may not be modified in any way, including removing material to lighten the wheel; they are to be used exactly as they are out of the box
5. The axles may be lightly polished to remove minor imperfections; however, the general shape of the axle may not be modified (ex. the shaft should be the same diameter at every point along the length) and may not be bent
6. Use of bearings, bushings, spacers, or the like between the wheel and car body are prohibited; there should be nothing between the wheel and the side of the car
7. Wheel coverings are prohibited; a covering placed on a wheel that might hold graphite or lubricant around a nail axle head is not permitted
8. No mechanical propulsion; the car must be freewheeling with no starting devices, springs, or other methods of propulsion; no magnets are permitted anywhere on the car
9. Lubricants you may use should be generally available to all Scouts and include, but are not limited to: Graphite/Molybdenum (most popular), Teflon, Nyoil, and Krytox; over application of lubricant which results in excessive shedding onto the track, is not allowed

INSPECTION:

1. Each car must pass inspection and weigh-in and be registered before it can compete in the derby
2. A car that does not meet the rules as described above may be disqualified

3. The pit crew, in consultation with the Scout, will attempt to modify the car to meet these rules before the start of the race; if the modifications are successful, the car will be entered in the race
4. Once a car passes inspection and weigh-in, the Derby Committee officials will take possession of the car for the duration of the Derby; the car will be returned to the Scout at the conclusion of the derby
5. The pit crew may make repairs to a car after check-in if the car is damaged during the race

ELIGIBILITY:

1. A Scout must be registered with Pack 2214 and dues paid in full prior to the date of the derby
2. The official Pinewood Derby kit provided by the pack (wooden block, axles, wheels) must be used; aftermarket substitutions of the kit or any of its part is prohibited
3. A completed car purchased from a third party is not allowed
4. The car may not be sent to third party facilities for tuning or other performance enhancements
5. Siblings or parents that wish to compete in the Cubmaster Invitational should use the standard derby kit; one may be purchased from the Pack for \$5, or from the Scout Store (in Hanover) or a craft store such as Michael's, A.C. Moore or Star Hobby
6. NO REPEATS or REPAIRS – The car must be built for the current Pinewood Derby racing season

RACES:

1. DEN RACES – Scouts will race against other Scouts of the same age/rank; the youngest Scouts (Lion den) will race first and the oldest Scouts (Arrow of Light den) will race last; each car will race six times, once in each lane; the average of the six times will be the official time for each car
7. PACK RACES – Once all six dens have completed their races, the top 2 finishers from each den will compete for fastest in the pack in the same manner as the den races
8. CUBMASTER INVITATIONAL – Following the Scout races is an opportunity for siblings and parents to compete against each other in the Cubmaster Invitational; this race will be conducted in the same manner as the den races.
9. MECHANICAL PROBLEMS – If a car suffers a major mechanical problem, a “No Race” will be declared and the Scout with the pit crew will have five minutes to accomplish repairs; the heat will be run again; if the car is unable to compete, they forfeit the heat

AWARDS:

DEN – Trophies will be awarded to the three fastest cars in each den

PACK – Trophies will be awarded to the three fastest cars in the pack

CUBMASTER INVITATIONAL – Certificates will be awarded to the three fastest cars

SUPERLATIVES - There are other categories for which a Scout can be recognized and awarded a trophy. The aim of these categories is to recognize Scouts that invested effort in their cars which may not have equated to a fast car. The Derby committee will cast votes to choose the winners. Unfortunately, it is impractical for the entire pack to cast their vote due to logistics of the race.

Strangest Shaped Car – this recognizes the imagination of the Scout; it is amazing what a Scout can build

Most Colorful Car – who doesn't love a lot of color; this appeals to the artistic nature of the Scout

Silliest Car – what elementary school aged kid isn't silly

Most Realistic Car – this category aims to recognize a Scout that has done the best job recreating a real car in their racer

Most Creative Car – this is a broad category intended to recognize overall creativity

Best Themed Car – some Scouts enjoy building or decorating their car with an overall theme (ex. a video game, holiday, movie or cartoon character, etc.)