



OFFICIAL PINEWOOD DERBY RULES

Length, Width and Clearance

- The maximum overall width (including wheels and axles) shall not exceed 2-3/4 inches.
- The minimum width between the wheels shall be 1-3/4 inches so the car will clear the center guide strip on the track.
- The minimum clearance between the bottom of the car and the track surface shall be 3/8 inch so the car will clear the center guide strip on the track.
- The maximum overall length shall not exceed 7 inches.
- The wheelbase (distance and location between the front and rear axles) may be changed from the kit body. In other words, you are allowed to move the axels from the original position.
- Only the official Pinewood Derby Kit passed out by the Pack may be used. No pre-built or other kits may be used. **NO PRE-BUILT KITS ALLOWED** – Any pre-built kit will be allowed to race but will not qualify for an award or qualify for District.

Weight and Appearance

- Weight shall not exceed 5 ounces. The reading of the official scale will be considered final. The car may be hollowed out and built up to the maximum weight by the addition of wood or metal only, provided the material is securely built into the body or firmly affixed to it. No liquids or loose materials of any kind are permitted in or on the car.
- Details such as steering wheel, driver, spoiler, decals, painting and interior details are permissible as long as these details do not exceed the maximum length, width or weight specifications.
- Cars with wet paint will not be accepted.

Wheels and Axles

- Axles and wheels shall be only as provided in the Official Grand Prix Pinewood Derby Kit.
- Wheels may be lightly sanded to smooth out molding imperfections the tread area. This light sanding is the only modification allowed. Beveling, tapering, thin sanding, wafering or lathe turning of the wheels is prohibited.
- Axles may not be altered in any way except for polishing.
- Wheel bearings, washers, bushings, and hub caps are prohibited.
- The car shall not ride on any type of springs.
- The car must be freewheeling, with no starting device or other type of propulsion.

Lubrication

- Only dry powdered lubricant (powdered Teflon(r)) may be used for lubricating the wheels... No graphite (dark powder). Also, do not use any oils, grease, liquid, or spray lubricants of any kind.

Ground Rules and Competition

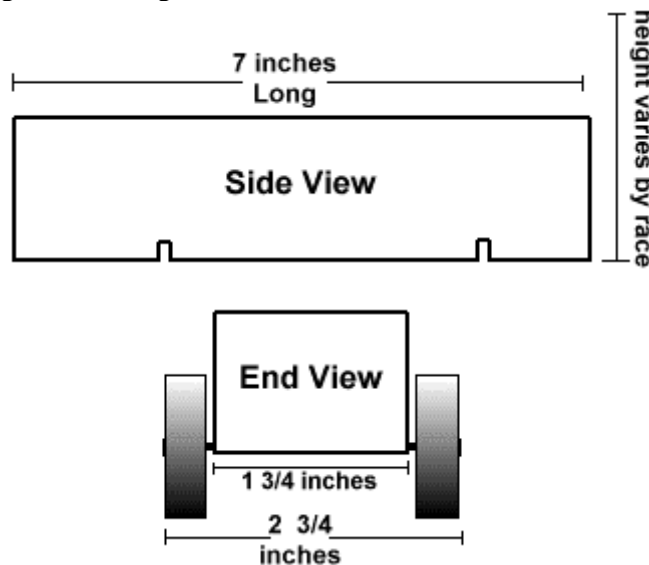
- The race is open to all Cub Scouts and Webelos Scouts registered in this Pack.
- Each scout may enter only one car in the competition.
- The car must have been built during the current year (the school year in which the Derby is held). Cars that have competed in a previous Derby are not permitted.
- Competition will consist of double-elimination races within the Pack.
- If a car jumps the track, the race will be run again. If the same car jumps the track a second time, that car will automatically place last in that race.
- If a car leaves its lane and interferes with the other car, the race will be run again. If the same car leaves its lane a second time and interferes with the other car, that car will automatically place last in that race.
- If a car becomes damaged and can be repaired with 5 minutes, the race will be run again. If not, the damaged car will automatically place last in that race.

BUILDING THE CAR

This section is just a helpful guide on how to build your car. You know the objective of your car; you have enough time to do it right; and you know the rules. Now it is time to build the car.

Sketch the Shape

When you sketch the shape of your car make sure it does not exceed the following dimensions: 7 inches long, 3 inches high, and the width of the block.



Trace the block of wood on a sheet of paper – both the side profile and the top view. We have provided a template on the last page of this handbook. Sketch sample shapes onto this paper. You will probably go through a couple drafts until you get the design you want.

Rough-saw the Derby Block

Transfer the design from the paper to the wood. You can do this a couple of ways. If the design is fairly simple, it can be done freehand. You can also cut the design out of the paper, and trace the cutout onto the block. If the design is more complex, glue the paper design to the car body with some spray glue and then cut it out. Some of the paper will be cut off, and the rest will be removed during sanding.

The goal in rough sawing is to remove as much material as possible from the car block with the saw, because it is the fastest and easiest tool to use.

You can cut the soft pinewood with a coping saw, which is fairly inexpensive and available at any hardware store. However, ask around your neighborhood or office to see if anyone has a scroll saw or band saw. These power saws will save you some time.

Complete the Final Shaping

Once the design is rough sawn, you need to start the most time-consuming part of the build step – final shaping. Use a pocket knife and sandpaper to shape the car.

About Pocket Knives: Knives are dangerous. If you decide to let your son do the carving, be sure he has had some instruction in knife safety and use (available in the Cub Scout manuals). Never leave a boy unsupervised when using a knife – they will need you to remind them of the safety rules – and to fetch bandages when they forget those rules.

About sandpaper: Sandpaper comes in various “grits”. Grit is identified by a number on the package, usually between 40 and 400 for woodworking. The smaller number is coarser, the higher number is finer. You can usually buy a package of mixed grit sandpaper sheets, which will include sheets of each grit. Use a low grit (e.g. 80) to remove material quickly. This will leave a fairly rough surface. Then proceed to the next grit to work the scratches left by the lower grit. A good progression would be 80-grit, 120-grit, 220-grit, and then a final sanding with 320-grit. Patience is the difference between a good sanding job and a “groovy” one.

Painting the car

Don't start painting until the car is completely smooth. Final sanding is best done with 320-grit sandpaper, although you can go higher or lower (depending on your patience). Fill any gouges or grooves with wood putty or auto body filler, and sand smooth when dry. You will also sand between coats of paint and finish.

Attach Decals

Apply any decals before applying finish. You can purchase decals (flames, racing sponsorship stickers, etc) from a craft or hobby store.

Apply Finish

Use a spray-on finish, available at hardware, paint, or craft stores. Several light coats are better than one or two heavy ones. Many finishes can be sanded between coats – check the label to see if this is possible.

Most derby cars look best with a high gloss finish, although you can buy the finishes in matte or semi-gloss. The finish will protect the water-based paint from bleeding if it gets wet, and generally make the car last longer. A smooth finish will also decrease friction between the air and the car. By the way, if you don't think that a boy can get a car wet enough to ruin the paint between your house and the derby race location, you are living in denial.

