



Pack 137 Pinewood Derby Rules and Tips

Hancock Church
Lexington, Mass
(Updated November 2009)

The Pinewood Derby is a race between model cars rolling down a 32-foot sloping track, and is one of the most popular and exciting pack events on the year. The cars are built by the Cub Scouts, with the help of their parents, from the Official Pinewood Derby Kits which are passed out at the November Pack Meeting.

- ★ Only cars that are new this year will be permitted to race.
- ★ Cars from previous years cannot be raced.
- ★ Use only the wood block, wheels and axle nails supplied with the kit
- ★ Parts, such as wheels and axle nails can be reused.
- ★ Each boy must race his own car in the official race. If a boy cannot attend the race, his car can only be raced in the parents' and siblings' race.

The Pinewood Derby will be held at the Hancock Church at a special Saturday pack meeting at 1:00 PM on January 9, 2010.

Registration, weigh-in and inspection will take place the morning of the race beginning at 9:00AM and ending at 12:00 PM.

Once the cars have been registered and inspected, they will be held by race officials at the church until the race.

The entire event is run by computer. The system is designed so that every car races once in each round. There are typically 6 rounds, meaning every boy will race 6 times throughout the event; no one is eliminated. At the end of the event, rank level and pack awards are presented to the scouts with the fastest cars in those categories.

The race schedule is generated by computer at the end of the weigh-in at 12:00 PM. To avoid the case of empty lanes during the races, cars that have not been registered by 12:00 PM will be removed from the schedule. Anyone planning to race that cannot make the weigh-in by 12:00 PM must notify race officials to assure that their name is not removed from the schedule.

After the computer scheduled races have been completed, some non-scheduled races will be run. The first will be a special elimination round for all scouts who have not yet won a race. The round will guarantee that every boy will win at least one race on race day. A final race with parents' and siblings' non-registered cars will be run IF time permits. The main race is setup to

last about two hours, with a race awards ceremony at the end. Show awards for each and every car are handed out at the Blue and Gold Banquet in February.

What to do:

1. Follow the racing specifications on the instruction sheet enclosed with the kit.
2. Double check that the car weight does not exceed 5.00 ounces (142 grams). The only scale that matters is the one we will use at registration. If in doubt, leave the car a little light - we will add weight as needed at weigh-in by gluing lead on the bottom of the car.
3. Double-check that the length does not exceed 7 inches and that the height and width, including wheels, do not exceed 2-3/4 inches. The minimum ground clearance should be 3/8" and the minimum wheel to wheel clearance should be 1-3/4" The block provided in the kit is the maximum dimension for length and width with wheels attached. The car is measured by fitting it into a special test box - headlights, bumpers or thick coats of paint can **disqualify** a car if added onto the full 7-inch block. At weigh-in, a wooden box is used to measure the dimensions of the car - if the car doesn't fit in the box, it can't be raced.
4. Allow enough time for the paint to dry before weigh-in!
5. Use only dry, powdered graphite or dry powdered Teflon lubricant (available at the scout store or at some hardware stores) to lubricate the wheels, but please do this at home. Lubricants will not be allowed at the race! **DO NOT BRING LUBRICANTS TO THE RACE!**
6. **Use only the wheels and axle nails supplied with the kit.** No substitutes or extra guide wheels will be allowed. No wheel washers or bearings are allowed. Wheels must be placed in the perform slots with allowance for aligning the axle slots.
7. On race day, each boy must race his own car in the official race. If a boy cannot attend the race, his car can only be raced in the parents' and siblings' race.
8. The front end of a car should be flat across the center $\frac{3}{4}$ " portion. This is to avoid getting an advantage at the starting line, where the cars are held back by a center pin. Notches around the center pin are prohibited. No part of the front wheels may extend beyond the front of the car.

Building Tips:

1. Young boys can cut their own car using an inexpensive coping saw, which can be purchased for a few dollars at most hardware stores. A rough file or rasp can be used to further shape the car. Sandpaper can also be used, starting with rough paper and proceeding to fine. A good progression of grits is 60, 150, 220, and 400. To avoid scratches, always sand with the direction of the grain. Many more tips can be found on the Internet by searching on "Pinewood Derby".

Speed Secrets:

1. Make sure the car goes straight when you roll it on a flat surface. If it steers to one side, the wheels will drag on the track's center guide and will slow the car down.
2. The outer surface of the wheel has mold marks on it and in previous years was sometimes not concentric to the hub. Turning the wheel on a lathe or electric drill is permissible as long

as you do not significantly change the shape of the wheel. Sanding off the mold marks works just as well. Do not add weight to the wheels!

3. The bearing surface of the axle nail has die flash on it. The die flash (ridges just under the nail head) should be removed.
4. Other things being equal, more weight makes a car go faster. Lead weight will be added to the bottom of every car, as needed, at registration to bring them up to 5 ounces. If you choose to add your own weight before the race, be sure you have some plan to remove it if our official scale shows the car is too heavy.
5. Pinewood Derby cars are fragile - most Pinewood Derby enthusiasts agree that the cars have about 5 to 8 good runs in them before they deteriorate. The car that is handled gently will stand a better chance at race time. Resist the temptation to race or play with the cars before the official race.

Appearance Hints:

1. Good appearance starts with a pleasing shape and the absence of blood stains. Have an adult handle all dangerous tools and/or supervise sawing and cutting!
2. Prepare the car for painting by sanding the surface smooth.
3. Spray painting works well. Get a bright color (maybe metal-flake paint) at a craft or hardware store and give the car many thin coats. Painting should be done in accordance with manufacturers' instructions.
4. Two-tone paint jobs look good too - they usually have to be hand painted.
5. Decals and stickers, available from the scout or craft stores, can do a lot to jazz up the appearance of a car.
6. Special effects can be produced from GI Joe parts, Legos and other toys and figures.
7. Cubs are usually proudest of cars they designed and decorated themselves!

The Pinewood derby is always a great deal of fun for the scouts, especially when they've done as much of the work as they can on their own. Parents, please help enough so your cub gets his car safely to the Pinewood Derby and on time. Our pack's track, purchased in 2000, has three identical lanes and is in excellent condition for fair and exciting races!

Racing Rules Using Computerized Judge System:

1. The Race consists of 6 rounds, each consisting of many heats. Every car will race once in every round. Races are scheduled by computer using a modified Stearns method that group scouts of like ages. The race winners are selected based on fastest race times.
2. If the HEAD JUDGE deems a car is mechanically not ready at the start of a race, that race will be postponed until the END OF THE ROUND to give time to fix the problem. If by the start of the LAST heat the car is still not raceable, the missed races will be run without that car.
3. If a car does not cross the finish line for any reason, the time will be allowed to run out, (recording 3rd place and default time for the heat) and the heat will not be rerun. When fixed, the car may participate in subsequent rounds.

4. If during a race a car moves out of its lane and / or disrupts cars in other lanes, the race will be rerun immediately with the two other cars. Default time will be recorded for the offending car. When fixed, the car may participate in subsequent races.
5. Errors by race officials (cars in wrong lanes, bad start, etc) or hardware failures will be rerun as per the judgment of the HEAD JUDGE.

To make your PINEWOOD DERBY more enjoyable...

- ▣ You will be issued a CAR INSPECTION TAG when you register. **Please carry this tag the day of the race to help you remember your car's number.** Head to the pit area when your car is called by the computer. (A large display screen will help you know when you're up).
- ▣ **Only boys whose cars have been called should be in the pit area.** When your race is finished, return your car to the PIT OFFICIALS and leave the pit area.
- ▣ **Only handle your own car!** Everyone worked very hard on their cars - we are asking that only the race officials touch other peoples' cars.

For questions concerning the Pinewood Derby, please feel free to contact the race coordinator or Cubmaster.

Good luck, and most of all - HAVE FUN !!!

