

Tips to get a sub-3-second Pinewood Derby Car and Stay Legal

Pack 631 - Sugar Land, TX

- Many say the aerodynamics play a big part, so take that into consideration.
- Use the pack axle jig. Without it your car will not run straight and veer into the railings slowing it down.
- Raise one of the front wheels off the track about 1mm. This reduces the number of frictional parts touching the track.
- Using a hand drill, insert your axle (nail) and see how true it spins. Any wobble means that your wheels won't pint straight down the track and will veer. You want to use axles that don't wobble at all. You can purchase extra wheel kits (colorded ones look good) from the Scout Shop, to have extra axles to pick from.
- Using a drill press (or hand drill) use a fine file to take off the burrs near the head of the axle. The using medium sandpaper (~80 grit), sand the axle in the drill press. Continue using finer and finer sandpaper (150, 220, & 300 wet) to get it smooth. Then use a wet polishing compound (also found at the Scout Shop) to perfect the axle.
- With the extra wheels, you also want to use wheels that are also true. Use a wheel mandrel (also from Scout Shop) to determine how true your test wheel is. You want all four wheels to not have any wobble.
- You will want the car as heavy as possible, which is 5.0oz. Since the pack scale is uncalibrated, have your car at about 4.7oz. Get to the event early. The scale will be set out so you can add/remove weight to be right at 5.0oz. The small sticky weights (Scout Store or Hobby Lobby) are good for adding small amounts of weight.
- You want the center of gravity about 1 to 1.5 inches in front of the rear axle. The goal is to use the weights as far back as possible on the car (to increase the potential energy as the back of the car sits higher than the front at the starting gate), without causing the front wheels to lift off the track.
- Use lubricant on the axles. Some lubricants are very good, but wear off quickly. Others are good, but have staying power for the multiple rounds of races that the car will undergo. Do your research and good luck!