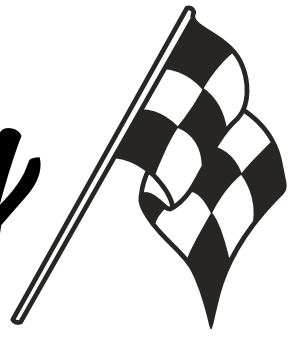




Pinewood Derby

TIPS & TRICKS



1. The boys and adult should make the car together as a project! It is not the intent that the parent show the Scout the garage door then walk away; nor is it the intent that the boy play video games while the adult cuts and sands. Parents should shape with the power tools and then direct the rest of the action while showing the boy each step in building a car.
2. Have fun! After all, this is what it is all about.
3. Know the rules. Being disqualified can be very embarrassing.
4. Safety first. Let's not lose any fingers.

Design Tips

1. Have your son draw a design on paper then cut it out and use it as a template. You might use the paper with the little squares on it to make it easier for him. Draw a side and top view on the paper by tracing around the block of wood.
2. Keep the car a full seven inches. It has to do with the physics of velocity and length of travel of the weights.
3. Use the full 2 3/4 inches (outside wheel to outside wheel) that the rules give you. This will allow the wheels to travel farther before hitting the center strip.
4. Leave a lot of wood in the back to put in the weights.
5. Use the groove closest to the end of the block of wood as the rear axle.
6. Do not make the front of the car pointed. It is hard to set up against the starting dowels.
7. Use your imagination. Be creative. Shape has the least to do with winning. A beaver driving a log or even a pickup truck is more interesting than a wedge and will be just as fast. The aerodynamics of a small block of wood doesn't mean much in thirty feet.

Lubrication

1. Use graphite only. Oil is prohibited and damages the paint and collects dust. Graphite works better than the new white Teflon.
2. Break in the wheels by spinning them with lots of graphite.
3. Put a small drop of white glue where the axle goes into the car body and put powdered graphite on it there. That causes less friction if the wheel should rub against the car body.
4. Other than a good polishing of the axles, dump the axles and wheels in a ziplock bag with some graphite and shake them for a few days prior to the race. That way the wheel and the axles are as slick as can be.

It's Time To Go Straight! *(THE PACK HAS A TOOL AVAILABLE FOR DRILLING THE AXLE HOLES INSTEAD OF USING THE PRE-CUT SLOTS)*

1. Put the axle in at a downward (5-10 degrees) angle. This provides two benefits. The first is the only the inside edge of the wheel is in contact with the track. This seems to make the car go straighter with less wobble. The second benefit is that the wheel rides to the outside of the axle and doesn't come in contact with the body. This tip is for experts only. First timers have trouble getting this right.
2. Axles must be in straight front to back. That is square to the body. True the axles, don't trust the slots! If you have one, use a drill press to ensure all axles are straight.
3. After pressing in the axles, test the car for crooked wheels...roll it on the floor. If the wheels are on straight, the car should roll 8-10 feet in a fairly straight line. Should the car turn left or right, you need to tinker with the axle placement without removing them from the car body, until it rolls straight.
4. Do not put the axles in at the top of the groove. Put them in at the middle. This lifts the car off the track a bit more and reduces the chance of rubbing on the center strip.
5. Glue the axles in place. Nothing is worse than having the wheel fall off as you cross the finish line.
6. Once you match a wheel and axle together with graphite, keep them together. They wear into each other as a matched set.

Weigh-In

1. Get the weight as close to the 5 ounce limit as possible. Add the last little bit of weight with lead tape or screws. The tape can be trimmed with scissors at the last minute. Remember, the official scale may not weigh the same as yours.
2. Everyone has an opinion on where to put the weight. The weight needs to be predominantly in the rear so that gravity can act upon the weight further up the incline and for a longer period of time. A car with more weight to the rear generally picks up more speed down the slope. Many suggest having the center of gravity at 1 to 1 1/2 inches in front of the rear wheels. But be careful not to put too much in the rear or you'll pop a wheelie.
3. What kind of weight? Melted lead is dangerous and unnecessary. Tubular weights can be sunk in the sides; flat weights, like those sold at hobby & council stores can be attached to the car bottom if it is carved in a bit. Incremental weights (with pre-marked grooves) are easier to snap off into the size you need. Absolutely no movable weights or mercury are allowed.
4. Keep the weight low on the car and in the center (Left/Right of the car). Put the weight just in front or behind the rear wheels for less wheel chatter.