

Guidelines for Pinewood Derby Car Assembly

Websites for car ideas and components:

www.pinewoodextreme.com

www.derbychamp.com

Please note that any ideas and components purchased must still comply with the Pack Pinewood Derby rules. This is very important as many purchased components and/or racer designs DO NOT comply.

The following guidelines are to be followed when building a Pinewood Derby racer. These guidelines are established to minimize controversy over the degree of parental involvement in the construction of the car. Remember that, ideally, the building of a Pinewood Derby car is a father/son endeavor. If a father is unable to assist the Scout in building the racer, help from a mother, older brother/sister, uncle, grandparent, or other adult is encouraged.

Car Design - The Scout should select and produce a sketch of the car design. Ensure that the width of the car is 1-3/4" or greater at the points where the wheels are attached. If the width is less than 1-3/4" at these points the car will not fit on the track.

Shaping the Car Body - In most cases, the adult is encouraged to rough cut the car body. This is particularly true if power tools are used.

1. If hand tools are used, let the Scout assist in cutting the shape. Use this opportunity to instruct the Scout on the proper use, care, and storage of the tools that you are using.
2. If power tools are used, ensure that all safety devices associated with the tools are employed. Use this opportunity to instruct the Scout on the safe operation of power tools. Make sure that safety glass/goggles are worn by anyone around a power tool in operation.
3. Check the grooves to ensure that each is at a perfect 90-degree angle to the car body. A car with untrue axles tends to steer to one side or the other, causing it to rub up against the side of the lane strip, slowing it down.

Finishing the Car Body - ALL sanding, painting, decal application, or other detailing of the car body shall be done by the Scout. Once the shape of the car body is established it is the Scout's sole responsibility to finish the car. Guidance by the adult is encouraged, but actual performance of the work falls to the Scout. Once again, use this opportunity to instruct the Scout on sanding technique, painting decals, etc., but don't forget to let the Scout do the work!

Wheels and Axles - Adults should take the lead in preparing the wheels and axles. All of the steps that follow are critical if the car is to be a fast racer!

1. As noted in the instructions that come with the racer, remove the wheel seams using a drill (electric or hand), a six penny finishing nail, and a piece of fine sandpaper glued to a flat block. Let the Scout assist by having him hold the sandpaper (all ages) or the drill (recommended for Webelos only).
2. Polish the axles with fine sand or emery cloth to get any burrs off and produce a shiny finish.
3. Insert the axles (without the wheels) into the car body to within 1/4" of the head of the axle. Make sure that the axles are inserted perpendicular to the car body. Gently remove the axles with a pair of pliers by slowly twisting and pulling on each axle.
4. Pre-lubricate (a) the inside of each wheel and (b) the part of the axle near the head where the wheel will rotate with dry powdered graphite. Do not use regular oil or silicone spray. These lubricants can soften the plastic wheels.
5. Slide the wheels over the axles and gently tap the axles into the car body. A gap of 1/32" (How do you measure that?!!) is recommended between the wheel and the car body. In short, a slight gap should exist between the wheels and the body. Each wheel should turn freely.