

Pack 9 Clinton **Pinewood Derby Rules for 2012**

Lions Pride – The Lions will compete as a group amongst themselves. Recognition awards for all Lions participating will be presented to this Rank.

Cub Scout Division - This division is composed of all Cub Scouts in Pack 9 and Webelos that bridged to Boy Scouting. When Scouts arrive they will have their cars registered, weighed, and inspected. Once the car is registered and has a number assigned it will be placed in the car holding area.

If, at registration, a car does not pass inspection, the owner will be informed of the reason for the failure, and will be given time within the official weigh-in time period to make adjustments. There will be a Pit area to make last minute adjustments. Weigh-in of each car must pass inspection by the official Inspection Committee before it may compete.

Please Note:

- All Scouts must be using a car that has been built since the last Pack 9 Pinewood Derby race in 2011.
- The cars shall not exceed the weight of 5 ounces. Final determination of car weight is done at registration check in on the official Derby scale.

Open Division - The Open Division is composed of anyone other than a Cub Scout who has the "racing bug". Parents, grandparents, brothers and sisters can all qualify for the Open Division. PLEASE NOTE: OPEN DIVISION RACERS MUST RACE THEIR OWN CAR. A CAR MAY BE RACED IN ONLY ONE DIVISION. Racing will begin immediately following completion of Cub Scout Division racing.

Pinewood Derby Kits – Car kits are available via Pack 9. If needed, kits and accessories may be purchased at the Scout Shop in Utica or area stores, such as K & K Train and Hobby or on line.

Derby Car Clinic – Saturday March 10th – Time- TBD – determined & announced by Derby Committee by 2/23/12
Derby Event – Saturday March 23rd or Sunday March 24th – Date & Time TBD by Derby Committee – by 2/23/12

NOTE

The following rules are based on the Official Grand Prix Pinewood Derby Kit Instructions and are designed to ensure fair competition and equal opportunity for success for all participants. Please be sure to read the instructions that are included in the kit.

Registration and weigh in - Once the car is turned in for registration, there will be NO additional graphite applied to the wheels. All graphite should be applied PRIOR TO weigh in and registration of the car. Excessive graphite application has the potential to create problems with both the track and registration area. **Note: Only dry powdered graphite is allowed.** Use of regular oil or silicon spray is prohibited.

Design Specifications - All Cub Scout racers, regardless of division, must comply with the following racing specifications which are excerpted from the Official Grand Prix Pinewood Derby Kit Instructions:

A. Width: Overall width shall not exceed 2-3/4".

Width between wheels – The width of the car at the axles may NOT be reduced and must be the original width as the car is supplied in the kit. Following this rule will 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.

Placement of axles - The original grooves for the axles must be used. This means that the distance between the front and rear axles and the distance between the front of the car and the front axle may NOT be changed.

B. Length: Overall length shall not exceed 7".

C. Weight: Weight shall not exceed 5 ounces. No loose materials of any kind are permitted in the car. The car may be hollowed out and built up to a maximum weight by the addition of wood or metal only, provided it is securely built into the body. (Please keep in mind that the cars, especially if not sealed with paint, are very prone to absorbing from or losing moisture to the air. Be cautious in adjusting a car right to 5 ounces, in case it absorbs moisture and then exceeds the max weight of 5 ounces. One precaution is to have some of the material used to increase the car's weight be easily adjusted or sanded off or removed.)

D. Wheels & Bearings: The car must have four operational wheels. Washers and bushings are prohibited.

E. Springing: The car shall not ride on any type of springs.

F. Details: Details such as steering wheel, driver, decals, painting, or interior detail are permissible as long as these details do not exceed the maximum length, width, and height specifications.

PLEASE NOTE THIS IMPORTANT RULE: Because of our starting gate and electronic finishing gate, there may not be any extensions, details, or structures attached to the front end of the body of the car. Any such addition to the car which might cause the electronic sensors (a light beam and electronic optical sensor) to trigger before the front end of the main body of the car crosses the finish line are NOT allowed. Additionally, in your own interest, it is not advisable to have the front end of the car notched, since the finish line light sensors are located in the middle of each lane.

G. Attachments: The car must be free-wheeling with no starting devices.

H. Inspection: Each car must pass inspection by the Official Inspection Committee before it may compete. The Inspectors have the right to disqualify any car which does not follow all of these specifications.

I. Damage: If damage occurs to a car during the race competition, a reasonable, but short, amount of time will be allowed for repairs. The Race Committee will make an effort to avoid having a car forced out of the competition due to damage incurred during racing, but not to the point of significantly delaying the competition.

J. Questions: All questions of procedure, interpretation of rules, judgments about repeating a race because of interference with one car by another car, and questions of a car passing inspection for registration will be decided by the Inspection Committee (the Race Committee).

Race Procedures

1. Boys in each den will compete against each other in Den rounds. The top car from each den will advance to the Championship round.
2. A Race Management software package is used to manage the race. It determines the matchups for each heat, and assigns points for each car's place in each heat. The software ensures that all cars race the same number of times and that each car races in each lane.
3. Prior to the Pack Championship heats, boys will have an opportunity to lube their car axles one last time. No other modifications will be permitted.
4. If a car leaves the track, runs out of its lane, interferes with another car, loses an axle, etc, the heat will be rerun. If the same car gets into trouble 3 times in the same round, the car is disqualified from the race.
5. If a car has mechanical problems, the contestant will have a couple of minutes to fix the problem. The car will need to be re-inspected prior to returning to the race. If the mechanical problem cannot be corrected, the car will be disqualified from the race.
6. If Scouts cannot make the race event but made a car or if their car makes the Championship round but the boy cannot stay, his car can be run for him by the Pack race officials.

GUIDELINES FOR PINEWOOD DERBY CAR ASSEMBLY

Building the Car - The following guidelines are to be followed when building a Pinewood Derby racer for the Cub Scouts (and for children in the Open Division). 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 parent-child endeavor. If a parent is unable to assist the Scout or sibling in building the racer, help from an older brother or sister, uncle, grandparent, or other adult is encouraged.

- A. 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.
- B. 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 glasses/goggles are worn by anyone around a power tool in operation.
- C. Finishing the Car Body – MOST of the sanding, painting, decal application, or other detailing of the car body should be done by the Scout. Once the shape of the car body is established it is the Scout's responsibility to do most of the finishing work on 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 skills, etc., but don't forget to let the Scout do the work!!!
- D. 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. 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 CAR BODY. AXLES INSERTED AT AN ANGLE WILL PRODUCE EXCESS FRICTION BETWEEN THE WHEEL AND THE AXLE, CAUSING THE CAR TO RACE SLOW.** Gently remove the axles with a pair of pliers by slowly twisting and pulling on each axle.
3. Prelubricate (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 SILICON SPRAY. THESE LUBRICANTS CAN SOFTEN THE PLASTIC WHEELS.**
4. 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.

TIPS AND TECHNIQUES

- I. A car with a sleek, aerodynamic shape generally races faster than a car with a "boxy" shape.
- II. Take plenty of time to sand the racer body. Make the body as smooth as possible.
- III. Add weight to the body. Cars are allowed to weigh a maximum of 5 ounces. We've all seen many "fast-looking" cars line up to race only to see them slow down considerably near the end of the track. This is usually the sign of a "light" car.
- IV. Check out the order sheet that came with the Pinewood Derby Kit. Weights, templates, *graphite*, decals, and paint can all be purchased locally (see above) and online.
- V. Seal the body. Use some sort of wood sealer or "Dull-cote" spray to seal the wood grain of the racer. This will result in a glossier finish.
- VI. Spray paint normally results in a much better finish than brushed on paint. Many (8 to 10) coats of light spray paint result in a hard, bright, and shiny finish.
- VII. Don't put the wheels on before you paint the car!!! Finish the body of the car completely before attaching the axles and wheels.
- VIII. As noted in the Guidelines, ensure that the axles are perpendicular to the body of the car. Axles installed at an angle will guarantee that the car will run slow.
- IX. Once the axles and wheels are installed and properly aligned, a small drop of glue near the point of each axle (toward the center of the car body) will help to keep the alignment from shifting. Don't get any glue near the wheel end of the axle!
- X. No matter how much fun it is to push these cars around on the floor, wait until after the race to do so. Scooting the racers around, dropping them on the floor, etc., can damage the wheels and can knock the car out of alignment. Treat the car with care until after the race is over!

This document is adapted from rules published by Pack 42 New Hartford, NY, Pack 339, Terryville, NY, and Pack 149, High Bridge, NJ.