

# Cub Pack 115 Pinewood Derby 2009

## Overview

The pinewood derby is an opportunity for cub scouts to learn about craftsmanship and sportsmanship through competition. The cub scouts build a wooden racecar from a kit consisting of a block of wood, 4 nails (axles), and 4 plastic wheels with some parental help. Building consists of shaping the wood block, smoothing any imperfections on the axles and wheels, painting/decorating the wood, and attaching the wheels. The shaped block, axles, and wheels will typically weigh about 2.5 ounces, so you will want to add weights to increase the car weight up to but not over 5 ounces.

Our pack's plywood racetrack has three lanes and is about 32 feet long. Each car straddles a thin strip of wood in each lane. The starting line is about 4 feet higher than the finish line so the cars are propelled with gravity. Our track has no timer, so we will have judges to call the first, second, and third place car for each heat which are awarded 3, 2, or 1 points respectively. The total points determine the placement within each group. Each car is raced the same number of times on each lane since all lanes may not be identical using a strategy called "Partial Perfect-N." Winning racers may participate in a council pinewood derby race if desired. In addition to the instructions in the car kit, we are adopting some additional council derby rules so that our winners will be eligible for the council race.

## Schedule

1/15/2009	6:30pm-8:00pm	January Pack meeting – Pinewood Derby Kit handout
3/14/2009	1:00pm-4:00pm	Pinewood Derby Workshop – Scout House Porch
3/19/2009	6:30pm-8:00pm	March Pack Meeting and Car Turn-In – Sanders Hall
3/21/2009	11:00am-3:00pm	Pack Pinewood Derby Race Day – Sanders Hall

## Woodworking Workshop

Pack 115 is holding a Pinewood Derby Woodworking Workshop to help the boys with their racecars. We will have a digital scale to weigh the cars, a scroll saw to help the boys shape the wooden block, an electric drill, and other tools. Volunteers are encouraged to bring tools and help. WWW links to a templates and photographs of sample cars in the "Resources" section may be helpful, but keep in mind that some of the examples do not meet the council rules.

## March Pack Meeting

During the March pack meeting, we will inspect the cars for compliance with the council rules including measuring the size, wheelbase, and weight. We will have some tools available for minor adjustments, in particular to remove some wood from cars that are over the maximum 5oz weight. Afterwards, we will impound the cars until the race day the following Saturday.

## Pack Race Day Adult Volunteers

On race day, we will need some adult volunteers to fulfill the following roles:

- Announcer  
This person will serve as a master of ceremonies and announce the race and coordinate the activities to keep things moving.
- Car Handler  
This person will sit at the table with the cars to keep track of the cars and carefully hand the cars to the starter at the beginning of each heat. (Only the adult leaders and volunteers will be handling the cars during the races.)
- Starter  
This person places the cars in the correct lanes and lifts the lever to start each race.
- Finish Judge (2)  
These two judges will determine the finish order of the cars in each heat, confirm they both agree, and inform the scorer to input the data into the computer.
- Scorer  
This person inputs the results from each race into the computerized worksheets that will display the rank, heat, Cub Scout names, car numbers, and running score. A video projector will display the screen for all to see the status.
- Design Judges (3-5)  
After removing the 15 cars that have won 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> place within their rank, the remaining Cub Scout cars will be judged on appearance. The five categories and criteria are the same used in the council derby. The 5 categories are Most Patriotic, Most Creative, Best Sport Theme, Best Scout Theme, and Judges' Choice. The judges will consider the following 5 criteria: Original Idea, Detail, "Boy" Made, Creative, and Overall Appearance. (The scouts will also vote to award the Scouts' Choice trophy).

#### Pack Race Day Schedule

- Siblings Race
- Tiger Cub Race (ribbons awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Wolf Cub Race (ribbons awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Bear Cub Race (ribbons awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Webelos I Race (ribbons awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Webelos II Race (ribbons awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Pack Race between 15 ribbon winners (trophies awarded for 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place)
- Appearance Award Judging for cub scouts who have not won a ribbon in each of 5 categories (ribbon awarded for each of five categories)
- Awards Ceremony

#### Council Race

The top 3 race winners in each Cub Scout rank and 6 appearance award winners may represent Pack 115 at the Council pinewood derby later in the year if desired.

#### Council Rules

The Suwannee River Area Council usually publishes their rules on their <http://www.suwanneeriver.net> web site but should be the same as last previous years:

#### Suwannee River Area Council Pinewood Derby - 2007 Rules

The SRAC Pinewood Derby Committee has elected to exercise its prerogative of making additions/adjustments to the BSA Cub Scout Pinewood Derby Rules. These additional /adjusted rules have been deemed appropriate to minimize any special design advantages. Listed first will be the BSA rules, as stated in the Pinewood Derby Kit box, then the additional/adjusted local rules.

#### CAR SPECIFICATIONS:

- Maximum width: - 2 ¾" – Maximum length - 7" – Maximum Height 3 ½" – Maximum weight - 5 Ounces
- Minimum width between wheels – 1 ¾"
- Minimum bottom clearance between car and track – 3/8"

#### RULES

- Wheel bearings, washers, and bushings are prohibited.
- The car shall not ride on springs.
- Only official Cub Scout Grand Prix Pinewood Derby wheels and axles are permitted.
- Only dry lubricant is permitted.
- Details, such as steering wheel and driver are permissible as long as these details do not exceed the maximum length, width and weight specifications.
- The car must be free-wheeling, with no starting devices.
- Each car (both racers and design/show competitors) must pass inspection by the official inspection committee before it may compete.
- If a car does not pass inspection, the owner will be informed of the reason for failure, and will be given time within the official check in time period to make any adjustments. A car not able to meet specifications will be disqualified.
- After final approval, cars will not be re-inspected unless the car is damaged in handling or in a race.
- The scale used on race day will be a digital scale with an exact 5-ounce weight and is the only official scale.
- Any lubricant, which remains wet after application, may not be used on any part of the car. Nor shall any powdered lubricant be allowed to "spill out" of the car during check-in or racing, as to mess up the track.
- Axle shafts must be from the current BSA Pinewood Derby Kit and must not have any material added to them, other than appropriate lubrication. Axle shafts may be sanded to remove burrs from the metal, but may not be altered in any other manner.
- Wheels must be from the current BSA Pinewood Derby Kit and can have the bore of the hub (hole in center) cleaned of any obstructions and the contact surface (around the circumference) smoothed but cannot have the cross section reshaped in anyway nor be lubricated in any manner along the contact surface.
- The forward most edge of the car must be wide and low enough to rest against the rear of the starting gate pin (in center of its lane) or it will be disqualified from racing.
- The wheelbase (distance from the center of the front wheel/axle to the center of the rear wheel/axle on the same side of the car) shall not exceed 4 1/2 inches.
- The objective of the Pinewood Derby is to allow a Cub Scout advised and assisted by an adult partner to design and build a wood car from the Official BSA Pinewood Derby Kit. The Pinewood Derby is not intended to be a contest of expensive and exotically built cars. These cars are subject to disqualification.
- All rules interpretations and judgments related to these rules and the race are the sole prerogative of the onsite rules official and his/her ruling(s) shall be final.

#### Car Numbering

Each cub scout is assigned a car number in the table below. The first digit indicates the cub scout rank. Please label your cars prominently with the assigned number to reduce confusion during the races.

#	RANK	NAME
11	Tiger	Adam N.
12	Tiger	Adrian
14	Tiger	Brandon L.
15	Tiger	Dominic
16	Tiger	Julian
17	Tiger	Mack
18	Tiger	Tyler
21	Wolf	Alex
22	Wolf	Blu
23	Wolf	Charlie
24	Wolf	Devin
25	Wolf	Michael H.
26	Wolf	Robert
27	Wolf	Spin
28	Wolf	Uvon
29	Wolf	William
31	Bear	Chris
32	Bear	Collin
33	Bear	David
34	Bear	Jalen
35	Bear	Kymani
36	Bear	Tristan
37	Bear	Xander
41	Webelos I	Darrell
42	Webelos I	Hugh
43	Webelos I	Jacob
44	Webelos I	John
45	Webelos I	Lowell
46	Webelos I	Michael M.
47	Webelos I	Seth
51	Webelos II	Adam R.
52	Webelos II	Joseph
53	Webelos II	Max
54	Webelos II	Rick
61	Sibling	Carson
62	Sibling	Katie
63	Sibling	Lauren
64	Sibling	Madison
65	Sibling	Maribeth

## Resources

The web site

[http://en.wikibooks.org/wiki/How\\_To\\_Build\\_a\\_Pinewood\\_Derby\\_Car/Dimensions\\_and\\_specifications](http://en.wikibooks.org/wiki/How_To_Build_a_Pinewood_Derby_Car/Dimensions_and_specifications)

has some good information. Please remember to use the council rules in this document and ignore the rules in this online resource. This site also includes an adobe acrobat design template for standard wheelbase PDF that may be helpful. If you print this document, be sure to select no page scaling so the resulting laser print will be the right scale. It may be helpful to design the shape of the wooden block on paper before transferring to the wooden block.

The web site <http://www.pack271.org/271/PWDerbyPatterns.asp> has some design template PDF files and sample car photographs that may be helpful to get ideas. Keep in mind that some of these examples use a modified wheelbase or are oversized and therefore not compliant with the council rules.