



### **St. Bernadette Cub Scout Pack 308 Pinewood Derby Rules and Hints**

The purpose of the Pinewood Derby is to help the Cub Scout build a team relationship with their parent or helper, experience the sense of accomplishment, the excitement of competition, learn good sportsmanship, and to have fun.

#### **The Pinewood Derby Car**

1. The car must have been made during the current year (the year in which the derby is held).
2. Cars must be built with the materials furnished in the BSA Official Grand Prix Pinewood Derby® Car Kit (BSA Catalog number A17006).
3. Dimensions:
  - Width – Overall car width including wheels and axles shall not exceed 2  $\frac{3}{4}$  inches.
  - Length – Overall car length shall not exceed 7 inches.
  - Height – Overall car height shall not exceed 5 inches. This is due to the timing device at the end of the track.
  - Shape – The car may be of any style but no part of the car may extend beyond the front bumper, which rests against the starting pin. "U" and "V" shaped front ends are not allowed. The most forward part of the car must be solid across the entire front.

4. Weight – The completed car shall not exceed 5 ounces. The car may be hollowed out and built up to the maximum weight by the addition of solid materials provided it is securely built into or attached to the car. Loose and/or liquid materials are not allowed.
5. Wheels – Only wheels furnished with the kit may be used and must have the BSA Pinewood Derby” stamp visible.
  - Wheels may be sanded to remove burrs but the tread area must remain flat. The tread area may not be rounded, grooved or shaped to a point.
  - No wheel bearing, bushings or washers are allowed. The wheel must spin on the authorized axle.
6. Axles - Only the nails furnished with the kit are allowed. Rod axles found at hobby stores are prohibited
7. Lubrication – Any type of lubrication is permitted on axles but must be applied prior to weigh-in. CAUTION, some liquid lubricants have melted the plastic wheels. Powdered graphite is the most commonly used lubricant.
8. The car shall not ride on any type of springs or have any starting devices. The car must be freewheeling.
9. Details added to the car, such as, a steering wheel, driver, decals, etc., are permitted so long as they are securely fastened to the car and do not exceed the car's size/weight limit.
10. Magnets - No Magnetic material may be used in or on the car.
11. As of the 2005 Pinewood Derby, all open class cars must abide by the above rules.

### **Race Day**

1. Inspection and Registration: Each car **MUST** pass inspection by the Official Inspection Committee before it may compete. The inspectors have the right to disqualify those cars not meeting the above specifications.
  - **ONLY** the scouts participating in the race may handle their cars during registration. The only exception is if the car needs to be examined by a race official or repaired. Scouts **MUST** race their own car.

- EACH car must "weigh in" during the registration period. At that time the car MUST meet all the requirements as listed in these rules.
  - Weight may be removed or added to the car prior to registration but the total weight of the car must not exceed the maximum of 5 ounces. A pit area will be set up by the Pack just prior to the registration table. Scales may be provided at the pit area but the official weight will be from the scales at the registration table.
  - Once the car is weighed in and accepted for competition, it will be placed in the custody of the racing officials and will not be taken out until the car is scheduled to run.
2. Each heat will be announced. Drivers (Scouts in the announced heat) will report to a designated area. All spectators must remain behind the barrier.
  3. The starter will make sure the cars are on the track properly and then will start the race.
  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 on the second run, the contestant is disqualified and automatically loses that race.
  5. Simple repairs will be allowed between races and heats but must be done before the start of the next race for which the car may be eligible. Modifications to the cars after registration are prohibited.

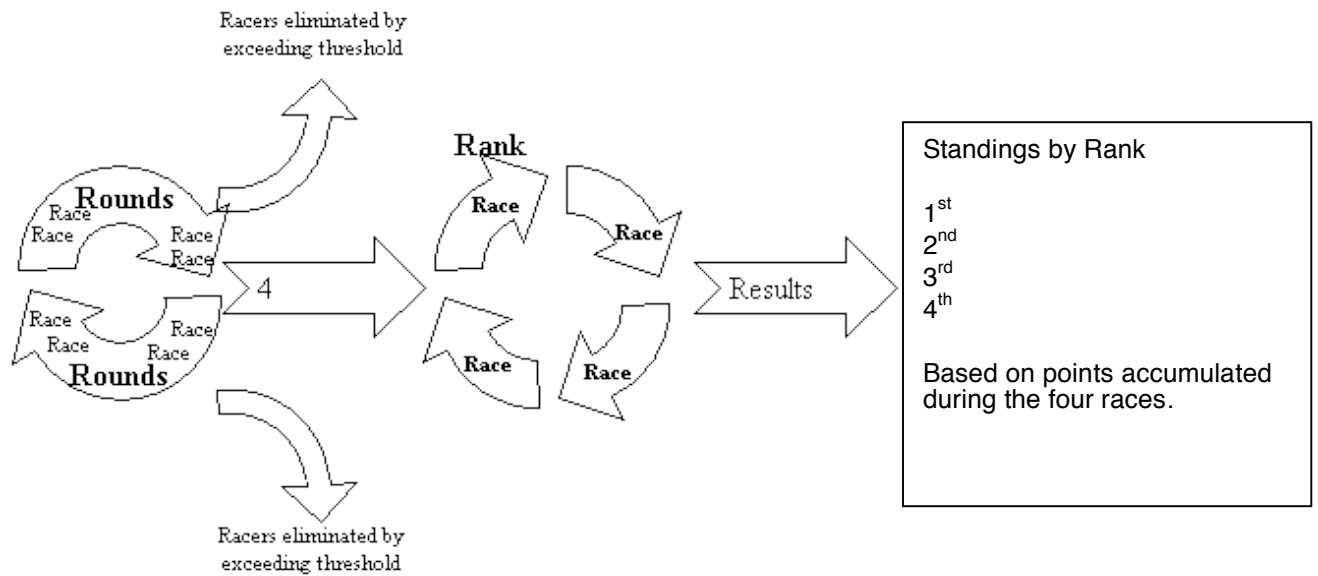
### **Racing Format Overview**

The purpose of this section is to provide an overview on how the 2005 Cub Scout Pack 308 Pinewood Derby will be conducted. The races will be different than in the past because of the new computer software linked to an automated timer. This tool automatically and randomly determines race factors, such as lane assignment and racers for each round. This software will also automatically calculate elimination process for the race.

The application used for the race is called "Raceview." It has been built specifically for pinewood derby races. For more information regarding the software, refer to [www.raceview.com](http://www.raceview.com).

Raceview uses random car and lane assignment and a point accumulation process to determine the winners for each rank (i.e., den level). Points are assigned based on results. Races are run until the winners are determined for

each den. Scouts are eliminated by exceeding the point elimination threshold of 9 points. The graphic below presents the concept used by Raceview to determine the winners for each rank.



The following key terms will help you understand the diagram, how the races will be conducted, and how the winners determined:

**Division** – The term used to define each den level race. There will be 5 division races, open class, one for each rank and one final race to determine the overall Pack winner. Open class will not participate in the final race

**Round** – There are multiple rounds per division race. The number of rounds in a division series is determined by the elimination process.

**Race** – In Raceview terms, a race is a run of cars down the track within a round. The system determines how many races there will be for each round based on the number of cars racing. For example, if there are 20 cars and 4 lanes, there will be 5 races per round. However, the number of races per rounds changes as cars are eliminated, so the number of races within a round cannot be predicted except at the beginning of the races for a division.

**Elimination** --- Raceview eliminates cars based on a combination of acquiring points, which are assigned based on finish and an elimination threshold. Cars are assigned points as follows during a race: 1<sup>st</sup> – 1 points, 2<sup>nd</sup> – 2 point, 3<sup>rd</sup> – 3 points, and 4<sup>th</sup> place – 4 points. The elimination threshold is 9. This means that a car races until it accumulates MORE than 9 points. A racer is guaranteed at least 3 races (because 3 consecutive 3<sup>rd</sup> place finishes would result in 9 points).

**The elimination process** – Once the racing begins for a division, Raceview

automatically and randomly picks cars for a race and lane assignments. The system tracks points for each participant and displays the cumulative results between rounds. As racers exceed the elimination threshold the system automatically presents racers proceeding to the next rounds. The process is repeated by running more rounds until 4 finalists are identified.

**The Finals for a division** –The division finals is the race used to determine the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> place finishers for a division (i.e., rank). There are 4 races in the finals; the system automatically ensures that the cars each race on one of the lanes. The finishing places are determined based on point accumulation during the four races (the elimination process is not used for the finals – standings are determined solely on point accumulation).

**Filler** – From time to time, due to the number of cars in a round and to ensure that the cars each race an equal number of times, the system will call for “filler” cars to be used during the race. These cars will be placed in the lane, manually held back to ensure they finish 4<sup>th</sup>.

**Empty Lanes** – Also from time to time, the system will indicate that a lane is not to be used during the race. This is a very unique situation dictated by the number of cars and status of the round.

**Run-off** – fFom time to time, the system determines that a run-off is required due to ties in point value. This happens toward the end of a round, when determining the final 4, or in the finals, due to ties. The system will automatically call for the tied cars to run a one-time race to determine the correct finish.

**Derby Finals** – This is the race that determines the overall district champions. The 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place finishers from each den participate in this race. The elimination process is used to determine the 4 finalists. The 4 finalists participate in a final round to determine the champion. The finishing places for the final four racers are determined based on point accumulation during the final round (the elimination process is not used – standings are determined solely on point accumulation during the final round).

While it is different than a double elimination process familiar to many, the system calls for at least 3 races per scout. Most scouts actually race 4 or 5 times before they accumulate enough points to exceed the elimination threshold. The winners are determined based on consistent performance throughout the elimination process. Because the system automatically and randomly picks both cars and lane assignments for a race, variables such as lane speed are factored into the results.

## Hints

1. If using the precut slots for axle placement, ensure that the slots are square with the body of the car.
2. **WARNING**, pine is a very unforgiving wood and has a tendency to split and/or chip. It is recommended, if using the slots for the axel placement, to install the nails while carving your car. This will maintain the structural integrity of the car. When the carving is complete, remove the nails until the final assembly. If using drilled holes for axel placement, refrain from axel installation until the car is completely finished. **The less you pull the axles (nails) in and out of the car the better. The holes or slots tend to enlarge, which increases the chances of losing a wheel during a race.**
3. If you need to weigh your car, take all the parts (wheels, axles, body and any other thing you are putting on the car) to the Lyndon Post Office or any other place that may have a digital scale. The Lyndon Post Office has a digital scale in the lobby. Remember that this is NOT the official scale so weights could vary.
4. If you use wood putty to fill in the bottom of the car, please remember this material could make your car weigh more than it should. One option is not to cover the compartment where the weights are located. This will allow for easy adjustment on race day.
5. This race is intended to be for the boys but have FUN building your derby car **with** your Cub Scout.

Adopted and approved by the MGC Pack 308 Committee on November 1, 2004