

# OFFICIAL PACK 262 PINEWOOD DERBY® EVENT RULES AND STANDARDS

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## **I. GENERAL RULES:** (Applies to all Race Events)

- I-1. Qualification:** All registered Pack 262 Tiger, Cub, and Webelos Scouts may design, build and enter cars that are eligible to participate in the "Cub Scout Race" event. Parents, guardians and siblings of Cub Scouts registered in Pack 262 may design, build and enter cars that are eligible to participate in the "Open Class Race" event.
- I-2. Essential Materials:** All cars entered shall be constructed from the "Official Grand Prix Pinewood Derby Kit" (referred to below as the kit) as distributed at the November or December Pack meeting. Additional kits may be purchased for an additional fee (\$5.00) or from the Scout Shop. (Kits may be purchased elsewhere if they are of the exact type manufactured by the BSA as specified above.)
- I-3. Competitor Categories:** All Tiger Cubs, Cub Scouts, and Webelos Scouts that are registered within Pack 262, and Parents, guardians and siblings with registered sons and/or brothers may enter this Pinewood Derby. Cub Scouts will compete with others from the same Cub Scout Rank. The first, second and third place winners from each Rank will move on to the finals.
- I-4. Attendance:** The Cub Scout MUST enter his own car. This means that the Cub Scout must be present at "Inspection and Registration" to enter his car into competition.
- I-5. "New Work":** Construction of ALL entries MUST have begun AFTER last year's Pack 262 Pinewood Derby event.
- I-6. Single Entry per Person:** Only one car may be registered by any person in the Pinewood Derby. (Rule excluded for "Open Class Race".)
- I-7. Inspection and Registration:** Each car must pass a technical inspection before it may compete. Technical inspection and registration of cars occurs on race day from 10:00 a.m. to 2:00 p.m.
- I-8. Car Testing:** Each racer will be allowed to test their car on the track from 10:00 a.m. to 2:00 p.m. Only one car will be allowed on the track at a time. Racers are not limited to the number of tests they can perform. The exception is that if another racer is waiting to test then the current tester is only allowed one test and then has to proceed to the back of the line. The electronic timer will not be on for testing.
- I-9. Late Registration and Inspection:** If a Cub Scout fails to register his car by the 2:00pm deadline on race day, he may submit his car to the Pinewood Derby Chairperson who at their sole discretion will decide if the car will be allowed to race. Any car that is accepted still has to pass the technical inspection. No Cars will be allowed to register after 3:00pm on race day. NO EXCEPTIONS.
- I-10. Failure to Pass Inspection:** The Inspection Committee shall disqualify cars which do not meet the rules as described herein. If a car does not pass inspection, the owner will be informed of the reason his car did not pass. Cars which fail the initial inspection may be taken home for modifications and brought back no later than 3:00 pm for final inspection and registration.
- I-11. Impound:** No car may be altered in any way after it has been registered. After a car passes registration, it will be stored by the Pinewood Derby Race Committee in "Pit Row" until race time.
- I-12. Car Design Rules Interpretation:** There is no interpretation of rules. All scouts and cars must meet the requirements as described in rules I-1 through I-12, and II-1 through II-11. If a car does not violate any of these rules it will be allowed.
- I-13. Race-Day Standards Interpretation:** On Race-Day, the Cub Scout must make all questions of standards interpretations to the Pinewood Derby Chairperson or Race Officials promptly. Decisions of Race Officials on questions of standards interpretations may be appealed to the Pinewood Derby Chairperson. All decisions of the Pinewood Derby Chairperson are final. Decisions of Race Officials on questions of fact (i.e. the result of a specific race) may not be appealed beyond the Trackmaster and/or Finish Line Judges. Note: Unsportsmanlike conduct by any participant or spectator will be grounds for expulsion from the competition and/or the race area.
- I-14. District Pinewood Derby:** Any racer who thinks they would like to compete at the district pinewood derby should check to make sure that their car also meets the requirements for the district race.

## II. CUB SCOUT RACE CAR DESIGN STANDARDS

- II-1. Material:** Race cars shall be constructed for this event from the parts contained in the Official Grand Prix Pinewood Derby Kit (referred to below as the kit) as sold by the Scout Shop. Materials from the kit may be supplemented but not replaced.
- II-2. Weight:** Race cars may weigh five (5) ounces (total weight) or less. 4.90 ounces or more is acceptable as determined on the official scales during the pre-race check-in. Cub scouts will be given three tries to get their car to the proper weight, after the third attempt the race committee will make any adjustment to get the weight between 4.90 ounces and 5 ounces. Note: The official scale will be available in the Aldergate Church Gymnasium from 9:00 a.m. to 2:00 p.m.
- II-3. Wheels and Axles:** The car shall roll on the wheels from the kit with at least three (3) wheels touching the track. The wheels shall turn about the axle nails from the kit. The axle nails shall be firmly affixed to the wood of the car body, and may be altered, polished and lubricated. Axle grooves may be re-cut, and wheel base modified, but car must meet all physical specifications. It must be obvious to the judges that the wheels and the nails from the kit are being used.
- II-4. Size:** Race cars may be no longer than 7 inches, no wider than 2-3/4 (2.75) inches, and no higher than 3 inches, and no portion of the car may extend past the starting pin, as determined by the official gages during the Registration and Inspection. Underside clearance of at least 3/8 (0.375) inches and inside wheel to wheel clearance of at least 1-3/4 (1.75) inches is recommended, so that the car will run on the race track. Adequate clearance is the responsibility of the race car builder.
- II-5. Weights and Attachment:** Weight may be added to the car and will be considered part of the car for purposes of all measurements. "Weight" is considered to be any material on the car that is not provided in the kit. All weight must be securely fastened to the car, e.g. by permanent glue, nails or screws, but not by "sticky substances", e.g. tape, or tack spray. Weights shall be passive, i.e. non-moveable, non-magnetic, non-electric, non-sticky, etc.
- II-6. Wheel Treatment:** Wheel treatment (hub and tread smoothing and polishing) may not result in substantial removal of mass or in reducing the wheel width from the original kit wheels. Some of the original "tread marks" on the wheel face must remain intact, i.e. apparent to the inspector.
- II-7. Unacceptable Construction:** The following may NOT be used in conjunction with the wheels or axles: hubcaps, washers, inserts, sleeves, bearings, and metal wheels.
- II-8. Gravity Powered:** The race car may not have any power assist devices such as rubber bands, magnets, CO2 or rocket engines. Also the race car may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car. (For instance, this provision disqualifies cars with sticky substances on the front of the car and protrusions which may catch on the starting pin.)
- II-9. Lubricants:** Only dry lubricants such as graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels. Lubricants may not foul the track.
- II-10. ANYTHING ELSE GOES.**
- II-11. Winning Racer's Speeches:**  
The winning racer, not a parent, in each rank must give a speech on their best speed secrets.

### III. CONDUCTING THE RACING COMPETITION

The Racing Competition will consist of heat races within each Rank to determine 1st, 2nd and 3rd place Division Champions for that Rank (Tiger, Wolf, Bear, Webelo I and Webelo II). Also, a series of final heats will be run to determine the Pack Grand Champion. 1st, 2nd, 3rd and 4th place will be determined for the Pack Grand championship. Track officials are responsible for properly conducting the races.

**III-1. Inspection Gage:** The race-day "Check-In" area will have the official scale and inspection gage. That check-in equipment will be the official equipment for the race. (Please stress this fact to all Cub Scouts. They should be prepared to make adjustments to their cars if necessary.)

**III-X. Pack 262 Race Track and Derby Equipment:** A four lane track is used to conduct the pack races. In addition to the track, a four lane "Fast Track" electronic timer with laser starting gate manufactured by Micro Wizard will be used to time the races. The timer has the ability to display the actual times of each race. It also blinks to display the winner of each race. The Races will be managed by using a software program that will interface to the "Fast Track" timer and is designed to manage pinewood derby races. The software program will manage the race by handling car registration, race scheduling, recording race results and totaling scores. The software package currently used is "Derby Master" by enterprising ideas. It is recommend that the electronic timer have the ability to display the actual race times of each car racing in any heat, independent of any software program. The software program shall display the actual time calculated by the timer.

**III-2. Race Day Lubrication:** There will be a lubrication table set up in the garage area. In the interest of fairness, the car needs to be lubricated before the final inspection. Cars will not be allowed to lubricate once they have been impounded except for those cars that have proceeded to the finals will be allow one addition lubrication before the beginning of the first race of the finals.

**III-3. Car Handling Responsibility:** Driver will report to the pit crew official to receive their car and are responsible for staging their own car at the starting gate in the appropriate lane. After the drivers have staged their cars, they are to report to finish line racer's area to watch the race and collect their cars after the race. After the race the line judges give the "OK to pick up your cars". The drivers must immediately return their cars to the starting gate by themselves for their next race. After the drivers last race the drivers must immediately return their cars to the pit crew official.

**III-4. Race Format:** The race format for Pack 262 Pinewood derby will consist of a cluster lane rotation matrix with up to four (4) scouts racing in four (4) heats then another group of four (4) scouts racing in four (4) heats until all scouts have run four (4) time down the track.

a.) The first part of the race will consist of Rank Division Races. There are five (5) Divisions which are based on Rank, Tigers, Wolves, Bear, First Year Webelos, and Second Year Webelos. Each Division will race amongst themselves. For example, Tigers will only race against other Tigers at the Division level and so forth.

b.) The second part of the race will consist of the Pack Trophy Races. The fastest three cars from each Division will race to determine the fastest cars from the pack.

c.) Before the Cub Scout races there will be the Open Class Races. The Open Class Races will follow the same lane assignment as stated below in III-X and with the winning procedures as stated below in IV-7.

**III-X . Lane Assignment:** To equalize differences among track lanes we will be using a cluster lane rotation matrix, two (2) to four (4) cars per heat will race rotating through lanes 1, 2, 3, and 4 one (1) times for a total of four (4) races for each car. Starting lane assignments for cars will be base on order of registration.

**III-X. Heat Assignment:** Every attempt will be made to run four (4) cars in each heat. (For example, a Division with five cars would consist of one heat with three (3) cars and another heat with two (2) cars. Six cars would run 3 and 3; seven cars would run 4 and 3; nine cars would run 3, 3, and 3). Heat assignments for cars will be base on order of registration.

**III-5. Car Leaves Lane:** If, during a race heat, a car leaves its lane but proceeds down the track in a manner that does not interfere with its opponent, then the race will be called good and recorded. If the car leaves its lane and interferes with another car, the race with all cars will be re-staged and re-run. If the same car again leaves it's lane and interferes with another car, that car will be judged last place, and the race will be re-staged and re-run without the interfering car.

- III-6. Car Leaves Track:** If, during a race heat, a car leaves the track without interfering with its opponent, it shall be considered to have ended its heat at that point and the race will be called good and recorded.
- III-7. Car Repair (Without Fault):** If, during the race, a wheel falls off or the car becomes otherwise damaged, then the SCOUT may, to the best of his ability perform repairs with the assistance of his adult partner or Pit Crewmember.
- III-8 Car Repair (With Fault):** If a car is damaged due to track fault, or damage caused by another car or person, then the Trackmaster, at his sole discretion, may allow additional repair assistance to the Cub Scout.
- III-9. No Finishers:** If, during a race heat, no car reaches the finish line on the track, the car which went the farthest in its lane shall be declared as that races winner.
- III-10. Call to Race:** Competitors will be called by name prior to each heat. When his name is called, each SCOUT will present himself to the "Pit Crew" to receive their race car.
- III-11. Track Fault:** If a car leaves its lane, at his sole discretion, the Trackmaster may inspect the track and, if a track fault is found which probably caused the initial violation, the Trackmaster may order the race heat to be rerun after the track is repaired.
- III-12. The Track Area:** Only race officials and those scouts who are currently racing may enter the track area. This rule will be strictly enforced. **NO EXCEPTIONS.**
- III-13. Rewards and Recognition:** The most important values in Pinewood Derby competition are parent/son participation, good sportsmanship and having fun. The Awards Committee is responsible for recognizing and encouraging these qualities in addition to traditional racing awards. Racers will be recognized as follows:
- a.) Every participating Scout will receive a Pinewood Derby patch.
  - b.) One car will be awarded a trophy for winning a unique award category (Best of Show, Most Creative, Fastest Looking, Most Unique, and Best Fuel Economy). Judging will be by an independent person or persons not associated with the pack.
  - c.) Every Scout will receive a participation trophy except if they win a trophy in the division races.
  - d.) Trophies will be awarded to the first, second and third-place finishers in each Division.
  - e.) Trophies will be awarded for the first, second and third-place finishers overall in Pack 262.

#### **IV. THE RACING ENVIRONMENT**

- IV-1. Track Length and Drop:** The track shall have a racing surface (starting line to finish line distance) of approximately 28 feet with a drop of approximately 4 feet.
- IV-2. Track Slope:** The track slope shall decrease from approximately 30 degrees at the starting line to approximately 0 degrees at the finish line.
- IV-3. Lanes:** Each lane will consist of a straight, smooth wooden strip approximately 1-1/2 (1.50) inches, but certainly less than 1-3/4 (1.75) inches, wide and approximately 1/4 (0.25) inches, but certainly less than 3/8 (0.375) inches thick, centered on a smooth surface no less than 4 inches wide. Each race car shall straddle such a strip during its heats.
- IV-4. Starting Mechanism:** The "starting line" shall consist of vertical pins of approximately 1/4 inch diameter, extending approximately 1 inch above the track surface and approximately centered in the each lane and hand triggered.
- IV-5. Finish Line Sensor Location:** The track has electronics called "finish line sensors" that shall be in alignment with the corresponding starting line pin and be approximately centered in its lane.
- IV-6. Finish Line Timer:** We will be using a "Fast Track" Timer to determine the times for the races.
- IV-7. Race Winners:** Winners will be determined by an average time over all four of the car's races with the slowest time being thrown out.
- IV-8. Finish Line Judging:** Two impartial Finish Line Judges shall be stationed at the finish line to observe each race, on the track. Race finish judging is determined by the finish line sensor, but may be challenged by the Finish Line Judge. If the track's electronic finish line sensor's result is challenged by the Finish Line Judges, the race will be re-staged and re-run.
- IV-9. Finish Line Judge Backup:** A Finish Line Judge will temporarily excuse themselves if they know that one of the race contestants is a son or relative. A backup Finish Line Judge shall be available in case the judge needs to be excused for any reason.
- IV-10. The "Big Board":** The result of each heat will be displayed on a projection screen called the "Big Board." The Big Board will be located in the front of the gymnasium on the stage.
- IV-11. Finish Line Clearance:** Track Finish Line Electronics and other track accessories, if used, must be no closer than 3 inches above the track.

## **V. OPEN CLASS RACE CAR DESIGN STANDARDS** (... or "Why should the Scouts have ALL the fun?")

The purpose of the Open Class Race event is to have a little fun. It will also help us to 'bleed' off some of our nervous competitive anxiety allowing us to be calm and collected during the Scouts race! (Right?)

All adults and siblings are encouraged to build their own cars. The open class division race will be held before the Cub Scout Races and the Final Trophy Races. Any parent, guardian and/or sibling of a Cub Scout who is registered in Pack 262 may enter this race.

**V-1. Technical standards:** The Technical Standards for the Cub Scout race (above) will be used in the Open Class with the exception that items I-1, I-3, I-4 (Note: Car must fit between the starting mechanism and the end of the track.), and I-6 do not apply.

**V-2. Entry Fee:** An entry fee of \$2.00 per car will be paid prior to participating in the race. All moneys raised go to Friends of Scouting.

**V-3. Number of Entries:** You may race as many cars as you wish.

**V-4. The Car:** You may use cars from your son's prior years Derby races but your son's current car for this years race may NOT be used.

**V-5. Weigh-In:** Cars will be inspected, weighed, and registered prior to the race.

**V-6. What Does The Winner Get?** Winner will be recognized with honor, glory, and the knowledge that they built the fastest car!

## **VI. SPECIAL NOTES TO ALL CONCERNED**

This project is a parent and son event, and is recommended as such by the National Boy Scouts of America. The Pinewood Derby Committee **STRONGLY SUGGESTS** that each parent emphasize this idea with your son. In all of the events, we require that the cars be built this year.

### **Sportsmanship:**

Three things the Pinewood Derby requires each participant to learn are: 1) the craft skills necessary to build a car, 2) the rules that must be followed, and 3) how to act and behave while participating in the Pinewood Derby or any other group activity. This is called sportsmanship.

The first thing to remember about sportsmanship is that everyone's skills are a little different. You may be good at something like singing or drawing, but not as good at something else like basketball or computers. Parents have different skill levels, too. This doesn't mean that you are a good person one time and not good another time. You can always be a good person, whether or not you have good car-building skills. Remember, you and your friends are individuals first and racers second. This idea is often called having respect for others.

The second thing to remember is to follow the rules. Without rules, there would be no Pinewood Derby. You will never know if you are really good at doing something unless you follow the rules. This is often called being honest.

The third thing to remember about good sportsmanship is that there are winners and losers in every competition. You accept this when you choose to compete. There may be times when you win and feel happy, and times when you lose and feel unhappy. Being a winner is easy, and losing is sometimes hard. If you win, you must not brag or gloat. If you lose, you must not feel jealous or bitter. To be a good sportsman, you must be able to say "I did my best" and be satisfied with the results. You must also be able to appreciate and feel happy for someone else when they run a good race or build a neat car.