

# PACK 405 PINEWOOD DERBY

## PINEWOOD DERBY RULES

The Pinewood Derby is open to all Pack 405 Cub Scouts. A separate race will be run for parents, leaders, alumni and siblings who wish to participate.

**The primary goals of our Pinewood Derby are GOOD SPORTSMANSHIP and HAVING FUN!**

- Enjoying the experience of adult partners and Scouts working together as a team
- Gaining valuable skills in using tools and materials safely
- Practicing and celebrating a child's creativity
- Learning pride in workmanship
- Understanding how to follow rules fairly

**Cars should be built by the Cub Scouts with some adult guidance.**

- Cub Scouts learn best by "doing", so it is important that the Scout be actively involved in all phases of the design and building process. (As an example, Tigers/Bears should be doing about 50% of the work on their own... Webelos and AOL Scouts should be building the car mostly on their own...)
- Any technical assistance should be fully explained to the Cub Scout so that he/she can use that knowledge on future projects.
- The role of the adult partner (Akela) should be as a guide and teacher. When using tools, a "hands over hands" approach to the teaching is best - the Scout should hold the tool and your hands hold his/hers to guide him/her as he/she learns its use.
- Please remember to also teach and use all appropriate safety procedures, including proper use of safety equipment.

### GROUND RULES

All Cub Scouts are encouraged to participate, regardless of any handicap. If the Scout has limitations that may affect participation, the Scout may appoint a deputy child of same or approximate age to assist if necessary. However, every Scout should be encouraged to enjoy participation up to his/her limits.

Only the Cub Scout may enter his/her car. This means that the Scout must be physically present to enter their car into competition.

Cars must be constructed from the parts contained in the Official Grand Prix Pinewood Derby Kit that was issued at a Pack/Den Meeting or which may be purchased at the BSA Scout Store. Materials from the kit may be supplemented but not replaced.

The car must have been built during the current year (the school year in which the Derby is held). Cars that have competed in a previous year are not permitted.

Cars must comply with all rules as set forth in these "Ground Rules" and the "Race Car Specifications" section.

Each Scout may enter only one car. Several cars may be constructed but only one may be registered and raced by the Scout.

Each car must pass inspection by the official Inspection Committee before it may compete. If at registration a car does not pass inspection, the Scout will be informed of the reason for failure and will be given time within the weigh-in period to make any necessary adjustments. Designated adults will be on hand to assist Scouts that require guidance.

If the car cannot be brought into compliance then it may not be raced, however it still may be entered in the Design Competition.

Safety violation thresholds will be assessed on a case-by-case basis by the Inspection Committee.

Appeals of Inspection Committee decisions may be raised to the Race Marshal. All rulings by the Race Marshal are final.

Once the car has passed inspection and received its number sticker, the Race Officials will place the Scout's car on the race table. Once done, Scouts will not have access to lubricate or otherwise improve or adjust their car until all racing is complete.

After passing final inspection the cars will not be re-inspected unless the car is damaged in handling or during a race.

## RACE RULES

All people other than officials running the race must stay behind the barriers at all times.

Each heat will be announced one at a time.

The Race Starter will make sure the cars are on the track properly and then start each race heat.

The car whose nose is over the finish line first is the winner. The official Pack 405 automatic electronic scorer will determine the first-, second- and third-place winners.

If a car jumps the track the race will be run again. If the same car jumps the track a second time and does not interfere with its neighboring car, the race will count. If the car interferes with its neighboring car, at the discretion of the Race Marshal the car will be eliminated from that heat and given a "Did Not Finish" (DNF) time, and the race will be run again.

If a car becomes damaged and can be repaired in a reasonable amount of time (a few minutes), the race will be run again. If not, the damaged car will be eliminated from that heat and given a DNF time.

Cars will be returned to Scouts after the Awards Ceremony.

## DESIGN COMPETITION

At car registration a single ballot will be issued to each Scout to allow them to cast votes for each category in the Design Competition: most creative, sportiest, most colorful, and kids' choice.

The ballot will be marked with the same number as the participant's registered car.

The cars may be viewed at the beginning of the event or at any time during the competition. Participants will then mark their choice for winner of each category by indicating the number of the chosen car next to the category on the ballot.

Participants may not vote for their own car. Any categories with a vote matching the participant's own car number will be ignored, however all other categories that do not match will be counted in the final tally.

The ballots may be deposited in the ballot box at the registration table at any time during the event, however all ballots must be deposited when the "Last Call for Ballots" is announced.

The votes will then be tallied by the Race Committee and the results announced at the Awards Ceremony at the end of all competition.

## AWARDS & RECOGNITION

The most important rewards in our Pinewood Derby competition are partner/Scout participation, sharing in good sportsmanship, understanding how to follow rules fairly and having good competitive fun with friends!

Official trophies will be awarded to the first, second, and third place finishers in the Pack 405 Pinewood Derby Race. A trophy will also be awarded to the first-place finisher in each den.

The design award categories are most creative, sportiest, most colorful, and kids' choice.

## RACE CAR SPECIFICATIONS

### Materials

The main body of the car must be comprised primarily of the wood block from the Official Grand Prix Pinewood Derby Kit. The block may be cut down, hollowed out and/or supplemented with other materials as long as such modifications do not take the car out of compliance with the specifications detailed below.

### Length, Width and Clearance

- The maximum overall width (including wheels and axles) must not exceed 2 3/4 (2.750) inches.
- The minimum width between the wheels must be 1 3/4 (1.750) inches so the car will clear the center guide strip on the track.
- The minimum clearance between the bottom of the car and the track surface must be 3/8 (0.375) inches so the car will clear the center guide strip on the track.
- The maximum overall length must not exceed 7 inches.
- The wheelbase (distance between the front and rear axles) may not be changed from the kit body's distance of 4 1/4 (4.250) inches.
- Overall height of the car must not exceed 5 1/4 (5.250) inches so the car will clear the electronic finish line at the bottom of the track. This is measured from the ground up with the car (wheels attached) sitting on a flat level surface.

### Weight and Appearance

- Weight must not exceed 5 ounces. The reading of the official scale will be considered final. The car may be hollowed out and built up to the maximum weight by the addition of wood or metal only, provided the material is securely built into the body or firmly affixed to it. No liquids or loose materials of any kind are permitted in or on the car.
- Details such as steering wheel, driver, spoiler, decals, wings, painting and interior details are permissible as long as these details do not exceed the maximum length, width, height or weight specifications.
- Cars with wet paint or glue will not be accepted.
- The racecar must be fully gravity powered and 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 that may catch on the starting pin.)
- The car body may have no moving parts, internal or external, with the exception of the four rolling wheels as supplied in the Official Grand Prix Pinewood Derby Kit.

### Wheels and Axles

- Axles and wheels must be only as provided in the Official Grand Prix Pinewood Derby Kit.
- The car must be freewheeling, with no starting device or other type of propulsion.
- The car must not ride on any type of springs.
- Axles may not be altered in any way except for polishing and the axle dimensions may not be changed substantially. It must be obvious to the judges that the official wheels and the nails from the kit are being used.
- Wheel bearings, washers, bushings, sleeves and hubcaps are prohibited.

- Wheels may be lightly sanded to smooth out molding imperfections on the tread area. This light sanding is the only wheel modification allowed. Beveling, narrowing, tapering, thin sanding, wafering or lathe turning of the wheels is strictly prohibited. Wheel treatment (hub and tread smoothing and polishing) may not result in substantial removal of mass or in any reduction in the tread width (track contact) from the original kit wheels.
- Wheel tread surface must be cylindrical and flat. Shaping the tread surface into a crown is not permitted.
- The words "Official B.S.A. Made in U.S.A." and/or any other lettering on the wheels must remain intact and clearly visible to the inspector.
- The original "tread marks" on the edge of the wheel's face must be intact, i.e. apparent to the inspector.
- Axles must be mounted in the slots provided in the wood block from the Official Grand Prix Pinewood Derby Kit.
- Wheels must be mounted such that they are perpendicular to the ground when the car is sitting on a flat level surface and ride on the flat wheel tread. Purposeful tilting or angling of the wheels such that the car rides on the wheel edges is not permitted.
- Rail riding and axle canting is not allowed. Both violate (at least one) of the above rules, and (in almost all cases) require a level of parental involvement inconsistent with guidance that **cars should be built by the Cub Scouts with some adult guidance**.

#### Lubrication

- Only dry lubricants such as graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels and axles. No liquid lubrication is allowed.
- Lubrication will not be allowed after the car has been weighed in or during the race.

### ADDITIONAL PINEWOOD DERBY KITS

We have additional Official Grand Prix Pinewood Derby Kits available to purchase for \$5. Kits and extra supplies (lube, axles, wheels, etc.) can also be purchased through ScoutShop.org or the Scout Stores in Valley Forge or Doylestown.

### QUESTIONS

If you have questions, please email [PACK405@gmail.com](mailto:PACK405@gmail.com).