

# Pack 438 Pinewood Derby

Pack Leaders are responsible for distributing these District Rules

## Construction

1. The 2021-22 Pack 438 Pinewood Derby will have the following categories:

- **Lion Speed** - Fastest Lion car
- **Speed** – Fastest car
- **Scouts' Choice** – Scouts vote for their favorite car.
- **Superheroes**- Any superhero design
- **Most Scoutiest**- Scout themed design

2. Adults are asked to REFRAIN from DIRECT WORK on building the cars. Adult participation as teachers, supervisors and coaches is strongly encouraged, but this event is intended to be a learning activity for the Scouts. All or most of the labor on the construction of the cars shall be performed by the Scouts.

- The use of power tools, especially cutting tools such as table saws, band saws, etc., is discouraged. These are extremely dangerous in the hands of Cub Scouts, and only encourage more adult participation than is necessary. The use of hand tools such as hand saws, coping saws, sanding blocks, planes, etc. is a part of advancement activities for all ranks, and should be encouraged for Derby building.

3. Each car must be built by a Cub Scout or Webelos Scout using the materials in an Official BSA Pinewood Derby Car Kit. This includes the pinewood block, axles and wheels (see rule 4 regarding wheels). With the exception of decorative and construction items such as weights, glue, lubricants, and finishing materials, only the materials from an official kit may be used. Separately purchased specially prepared items such as contoured pinewood blocks or machined wheels are specifically prohibited. Parts and portions of cars built in prior years may not be used in the construction of the car.

4. Official BSA wheels are required for all cars.

- Cars competing in the speed category shall use official black BSA wheels from an official pinewood derby car kit; wheels of other colors will result in disqualification.
- Cars that are not competing in the speed category may use official BSA wheels of other colors.

5. The overall length of the car shall not exceed 7 inches (17.8 cm).

6. The overall width of the car shall not exceed 2 3/4 inches (7.0 cm).

7. The overall height of the car shall not exceed 4 1/2 inches (11.4 cm).

8. The weight of the car shall not exceed 5 ounces (141.75 grams).

The recommended method of weighing cars is with a digital postal scale set to measure in grams (less than or equal to 141.75 grams – 2 significant digits of precision).

9. Cars shall have a minimum of 3/8-inch (1.0 cm) clearance from the bottom of the car to the track.

10. No loose materials or sliding pieces are permitted on or in the car.

11. The car may be hollowed out and built up to the maximum weight by addition of weights, provided the car continues to meet the other construction requirements.

12. The car shall not ride on any type of springs.

13. The car shall be freewheeling with no starting devices or propulsion devices, e.g. springs, fans, bottle rockets, balloons or CO<sub>2</sub> cartridges. Movable weights are prohibited, as is the use of a liquid weight such as water or mercury.

14. The distance between the front and rear wheels shall not be altered. The axle cutouts provided in the blocks must be used. These may be re-drilled, but new holes are prohibited.

15. Purely decorative items such as steering wheels, drivers, decals and paint are permissible, as long as they meet other listed requirements.

16. BSA Pinewood Derby kit axles may be polished.

17. Only dry lubricants (e.g. graphite) may be used on axles.

18. Wheel bearings, washers and bushings are all prohibited.

19. Weights may not be added to the wheels.

20. The inner dimensions of the wheels may not be thinned or altered

21. Rough edges and excess mold flash on the wheels may be sanded, but the wheels must retain 97% (1.155 inches - 29.24 millimeters) of their original diameter, and 100% of the running surface must be 90 degrees to the face of the wheel. Alteration of tread contours, e.g. rounding, is prohibited. See diagram.



**OK!!!**

**Not Acceptable**

22. Specific lubrication of the tread is prohibited.
23. Pre-lubricating the track is prohibited.
24. The nose of the car cannot be altered (cut out) in a way that when placed on the starting gate, it is past the starting line or is ahead of another car. Cars with pointed front ends must be able to rest on their own in the starting gate without moving ahead of the starting line or other cars.

## Eligibility

25. Packs are encouraged to hold an Open/Adults/Siblings race for family members to build cars and participate in the Pinewood Derby experience. However, there will not be a separate Open Category at the District Derby.
26. Registered Cub Scouts – Lions, Tigers, Wolves, Bears, and Webelos – will be eligible to participate in the District Pinewood Derby, as will any Scout who won in any category at his Pack Derby as a Webelos but who has since crossed over to Boy Scouts.
27. A Cub Scout or Webelos Scout may build more than one car, but may only enter one car in the race.
28. To enter the District Derby, a Scout's car must have placed in a Pack's Derby held since September 1 of the year prior to the district race. No car built prior to September 1 of that year may be entered. The District race is April 2nd, 2022. A car must have been built on or after September 1, 2021 and placed in a Pack race on or after that same date.
29. Each car will be entered in the category that it won in the Pack Derby - Speed, Scouts' Choice, etc. A pack may be represented by a maximum of three (3) cars for all but Scouts' Choice where 1 car will be represented. In total a maximum of (10) cars per pack and be presented at the district race. Packs that have a Lion den may bring their fastest Lion Den car as an additional car for a total of 11 cars. The Lion Den cars will be raced in a special Lion speed race and will not be eligible for any other categories. (If a Lion den car places in the top 3 of your pack, your Pack can decide which category he would like to enter and then enter the next fastest/next highest vote getter in the vacated category.)

30. Cars may only be entered in a single category at the District race. If a car wins in multiple categories at the Pack event, the Scout must choose in which category he wants to compete at the District Derby. Packs are encouraged to limit winners at the Pack level to one category as well to enable more Scouts to move on to the District competition

## District Derby

31. At the conclusion of the Pack Derby, the Cubmaster (or representative) will impound the winning cars (if they are going to compete in the District Derby). The Cubmaster (or representative) will register all ten (10- or 11 if a Lion speed car is entered) cars at the District Derby. Packs shall notify the District Derby Committee of the entrant names and their categories at least fourteen days prior to the date of the District Pinewood Derby. Cubmasters shall take care to pack and store the impounded cars to ensure that no damage occurs to their performance, appearance or finish.

32. If a car owner is unable to attend the district Derby, that Scout may designate another Scout (not adult) to represent the winning car. The Scout representing the car at the Derby (owner or designee) will be known as the "car's driver."

33. At the District Derby, each Cub Scout or Webelos Scout entrant is requested to be in the official Scout field uniform.

34. Once registered, only derby officials and car drivers may touch the cars.

35. Each car shall be inspected for compliance to the construction rules prior to being registered. These rules apply to all categories. Once it passes inspection, the car will then be labeled with its entry number.

36. Strict review of the wheels for the fastest car section will be undertaken by the pre-race judges.

- Light sanding as described in rule 21 is the only wheel refinement allowed. • All four wheels must run on the track.
- All four wheels must run on the track at the same time.
- All four wheels must be flat on the track.
- Rail running and /or cars with elevated wheels (1 wheel off and 3 wheels on) will be disqualified unless corrected prior to racing.

37. After passing inspection, cars will be placed on designated tables and shall only be handled by the car racer and race officials. After passing inspection, cars may not be altered in any way. NOTE: NO lubrication may be added once the car has been checked in.

38. Cars failing to pass inspection will have until the start of the race to be modified in order to meet requirements. Alterations may only be performed in the race area by the car driver. A race official will be available to supervise; other adults are not allowed in the race area.

39. All cars must be able to run all the way down the track and past the finish line to be entered in any category.

40. The Speed ("Fastest") winners will be determined by a computerized timing system. Every car will run once or twice on each lane, as decided by the pack or district race coordinator. The hosting Pack will choose the race software. The car with the fastest time will be designated the winner.
41. All judging categories will be determined by vote of the Scouts. Each Scout present will be provided a ballot at check-in and Scouts will have an opportunity to view the cars until the end of the first hour of racing. Scouts will choose their top cars in each category. For each ballot, 5 points will be awarded for a 1<sup>st</sup> place vote and 3 points for a second place vote. Ballots will be tabulated and a winner selected by the most points. A Scout may vote for his/her own car. Scouts must be present to vote, and only those who have a car entered in the District Derby may vote.
42. During race time, if a car jumps the track, a re-run may be done at the time of the jump or at the end of race, depending on what's best for the race software. If the car jumps a second time it will have a time of 9.999 sec for run. However, only the fastest time will be used to determine the winner.
43. In the event of a tie, all tied cars will race to determine the winner. If there are more cars than there are lanes (e.g. three cars with equal times and a 2-lane track), the cars will race in a single lane against the clock until a winner can be determined. Otherwise the cars will race against each other in each lane and their times summed as in a regulation race until a winner can be determined.
44. If a wheel comes off, repair time is allowed. Only the car driver may make repairs. No adult may touch the car. Adults may provide advice and suggestions only.
45. In case of computer, power or track failure, winners will be decided by double elimination. Double elimination races will consist of 2 heats of 2 cars each. After the first heat, the cars will swap track positions and rerun. A car must win on both track positions to win the race. A car must lose races against 2 different cars to be eliminated.
46. The decisions of the judges and the Derby Officials will be FINAL. All decisions will be made in the Spirit of Scouting, fair play, good sportsmanship and FUN!
47. Trophies are awarded in all categories.
48. GOOD LUCK and HAVE FUN!