

# 2024 CARDINAL DISTRICT PINEWOOD DERBY RULES

## OFFICIAL CAR RULES:

- These rules and the equipment used at this event take precedence over any rules or equipment used at previous Pinewood Derbies.
- The Pit Boss has final say if a car passes or fails inspection.

All cars, **regardless of division or category**, must comply with the following racing specifications which are excerpted from the Official Grand Prix Pinewood Derby Kit Instructions:

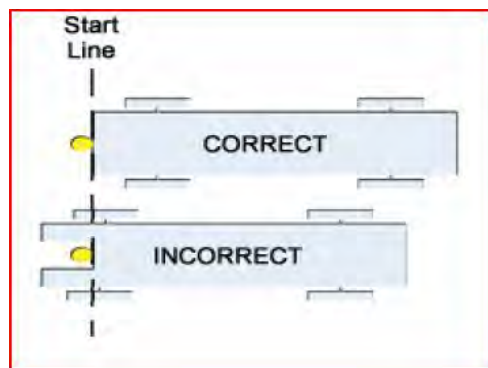
- The car must be newly constructed. It shall not have been built (whether it was run) in a previous year.
- The car must be built using the materials in the official Pinewood Derby Racing Car Kit, including the body block and nail axles. Wheels from the kit may be substituted with Official BSA approved colored plastic wheels purchased from the Scout Shop (Black – SKU 17553, Blue – SKU 17556, Orange – SKU 17557, Red – SKU 17554, Yellow – SKU 17555). No other wheels may be used. Materials from the kit may be supplemented but not replaced. Professionally prepared axles and wheels are not permitted.

### 1. Length, Width, and Clearance

- Overall width including wheels, axles, and attachments shall not exceed 2  $\frac{3}{4}$ ".
- The width between wheels must be 1  $\frac{3}{4}$ " so the car will clear the center guide strip on the track.
- Overall height including any attachments shall not exceed 4  $\frac{3}{4}$ ".
- Bottom clearance between the car and the track must be at least  $\frac{3}{8}$ " so the car will clear the center guide strip on the track.
- Overall length including any attachments shall not exceed 7.0".
- The wheelbase (distance between the front and rear axles) must remain at a distance of 4  $\frac{1}{4}$  inches (some kits may be off between 1/8 inch to 1/4 inch).

### 2. Car Body, Weight, and Appearance

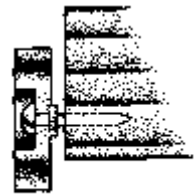
- The maximum weight shall not exceed 5.00 ounces. The reading of the official scale will be final.
- No liquids or loose materials of any kind are permitted in or on the car.
- No taping of weights to the car is permitted.
- The car may be hollowed out and built up to a maximum weight by the addition of solid materials only, provided any additional materials are securely built into the body or firmly affixed to it.
- Details such as steering wheel, driver, decals, painting, or interior detail are permissible if these details do not exceed the maximum length, width, and height specifications and/or modify the mechanical functions of the body, wheels, and axles.
- The car shall not have any parts that include live animals, reptiles, etc.
- Car shall not extend past the starting gate.



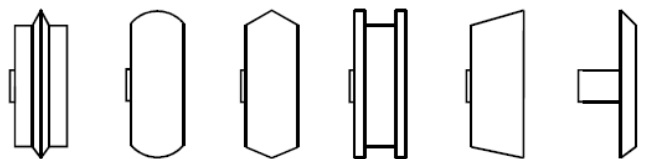
Note: The starting gate is a dowel coming up from the track that is lowered evenly among the lanes at the same time. Any attempt to build a car that extends beyond the starting gate dowel will be disallowed.

### 3. Wheels & Axles

- a. **ONLY BSA approved wheels and axles**, as provided in the Official Pinewood Derby Kit (or the Official BSA approved colored wheels purchased from the Scout Shop) shall be used (Black – SKU 17553, Blue – SKU 17556, Orange – SKU 17557, Red – SKU 17554, Yellow – SKU 17555).
- b. The wheels may not be tapered or rounded. The wheels may be slightly sanded to remove any molding marks or surface imperfections but may not be modified in any other way. Lathing wheels is not permitted. The treads must be left flat. Beveling, tapering, narrowing, thinning, thin sanding or wafering of the wheels is prohibited. See below for examples.
- c. Washers and bushings are prohibited.
- d. The car must have four wheels.
- e. The distance between front and rear axles cannot be altered.
- f. Axles must be **fully visible for inspection**. If the axle channel is covered, the covering must be removable at the time of registration for inspection of the axles. Please do not permanently attach any device that covers the axle channel on the bottom of the car.
- g. The car shall not ride on any type of springs.
- h. The car must be freewheeling, with no starting devices or other types of propulsion.
- i. Axles can be smoothed to remove surface imperfections, but not altered in any way except polishing. The head of the axle (nail) shall not be altered.
- j. Judges will use a special-purpose gauge to ensure that wheels do not have a diameter less than 1.180." Raw wheels (slightly sanded- not lathed) will have 1.182" to 1.185" of diameter or greater. Judges will also check to ensure that the wheels do not have a width less than .360". Finally, a visual inspection and, if necessary, comparison against known illegal wheels on web sites such as maximum-velocity.com will be used to ensure no other illegal modifications have been made to the wheels. If the judges determine that a car has illegal wheels, then the competitor may either swap the wheels with legal ones (supplied by the judges) or the car will be allowed to race but will not be eligible for any prizes.



Acceptable wheels



These are examples of unacceptable wheels.

### 4. Lubrication

- a. Only graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels. You MAY NOT use any other lubricant, especially oil and silicone sprays. (Liquids and sprays mix with the paint of the car or the plastic wheels and make them tacky which will slow your car.)
- b. There will be NO lubrication after your car has completed Final Inspection and Registration.
- c. Lubrication must be applied outside of the building. If a car is seen being lubricated inside the building by one of the vehicle inspectors, that car will be disqualified.

### 5. Inspection and Registration

- a. Each car must pass inspection by the Official Inspection Committee before it may compete. The Inspectors have the right to disqualify those cars which do not meet these specifications. The Pit Boss has final say on if a car passes or is disqualified.
- b. Once the car has been inspected, weighed, and registered, it will go to a holding area and may only be handled: by the Cub Scout participant to place the car on the track for racing or to remove the car from the track and return it to the holding area ("garage"); by the Pit Crew for repairing; or by the judges for evaluation of design.
- c. Once registered, there will be NO additional lubricant applied to the wheels. All lubricant should be applied outside of the building and PRIOR TO weigh in (excessive graphite application has made a terrible mess of both the track and the mall in the past years).
- d. No test runs before the event.

## 6. Ground Rules and Competition



### SPEED

- a. The car cannot be altered in any way after the race starts, except for repairs. NO GRAPHITE may be applied to the car during the race or while in the building.
- b. The speed race will be run on a multi-lane track with a timer. Each Cub Scout will run multiple races, once on each lane of the track. The winner will be the car that has the lowest total elapsed time in the races.
- c. Only Pinewood Derby officials and Scouts participating in the current race may enter the track area.
- d. Each heat will be announced. Drivers will retrieve their cars from the “garage,” report to the starting line and place their cars on the designated track. The starter will start the race.
- e. The car whose nose is over the finish line first is the winner for that race as detected by the electronic finish device.
- f. The judge at the finish line will determine the winner if the electronic finish device fails.
- g. The drivers will then report to the finish line to retrieve their cars for the next race and return their cars to the “garage” after the last race of the heat. The drivers return to their places outside the track area after the heat.
- h. If a car jumps the track or interferes with another car, the heat will not be counted and will be re-run. If a car jumps the track twice in the same heat, that car will be disqualified from the race.
- i. In the event of a breakdown on the track (a wheel falls off), a repair time of two (2) minutes will be allowed. Only the Cub Scout participant and the Pit Crew will make repairs. One time only is allowed for repairs to a car.
- j. The Pinewood Derby Committee will manage any questions of the rules or problems that may arise during the event.
- k. The decisions of the Inspection Crew, the Derby Officials, and the Judges are final. These rules will be strictly enforced.

### DESIGN

#### Best Design

- a. Cars will be judged by independent judges that have been chosen by the Pinewood Derby Committee. These judges are selected by the Committee and instructed to be unbiased in their judging.
- b. Best design will be based on the following:
  - Neatness: is the overall appearance pleasing and well-executed
  - Detail: how well was the idea conducted
  - Colors: do the colors blend well with the overall design
  - Scout Ability: is it evident that the Cub did most of the work
- c. Votes will be cast on ballot sheets and tallied by members of the Pinewood Derby Committee.

#### Most Original

- a. Cars will be judged for Originality by independent judges that have been chosen by the Pinewood Derby Committee. These judges are selected by the Committee and instructed to be unbiased in their judging.
- b. Originality will be based on the following:
  - Unique Design: something other than a “usual” race car design
  - Clever use of materials
  - Unique Colors: assorted color scheme that impacts the design
  - Detail: how well was the idea conducted
  - Scout Ability: is it evident that the Cub did most of the work
- c. Votes will be cast on ballot sheets and tallied by members of the Pinewood Derby Committee.

## 7. Awards and Recognition



- a. The most important values in Pinewood Derby competition are parent/scout participation, good sportsmanship and learning how to follow rules. The Awards Committee is responsible for recognizing and encouraging these qualities in addition to traditional racing awards.

- b. First, Second and Third place trophies will be awarded in each category of Speed. One trophy will be awarded for Best Design and Originality per Rank grouping. Trophy winners must be present to win.

### ***Coaching Hints for Parents***

- Help your Scout understand the rules and specifications found in the kit and those developed by the Cardinal District Pinewood Derby Committee.
- Spending time with your scout and helping them “do their best” will be remembered by both of you long after the race is finished.
- Remember the focus of this event is not to win at any cost but for each Cub Scout to “DO THEIR BEST” and HAVE FUN!!

### **PACK LEVEL RACING GROUP BREAKDOWN**

- LIONS WILL RACE AS A SINGLE GROUP
- TIGERS WILL RACE AS A SINGLE GROUP
- WOLVES WILL RACE AS A SINGLE GROUP
- BEARS WILL RACE AS A SINGLE GROUP
- WEBELOS WILL RACE AS A SINGLE GROUP
- ARROW OF LIGHT WILL RACE AS A SINGLE GROUP

### **PACK LEVEL DESIGN JUDGING BREAKDOWN**

***TWO DIFFERENT CLASSES - ONE EACH FOR BEST DESIGN & MOST ORIGINAL***

- LIONS WILL BE JUDGED AS A SINGLE GROUP
- TIGER CUBS WILL BE JUDGED AS A SINGLE GROUP
- WOLVES WILL BE JUDGED AS A SINGLE GROUP
- BEARS WILL BE JUDGED AS A SINGLE GROUP
- WEBELOS WILL BE JUDGED AS A SINGLE GROUP
- ARROW OF LIGHT WILL BE JUDGED AS A SINGLE GROUP

### **CONTESTANTS WHO WILL QUALIFY TO PARTICIPATE IN THE DISTRICT PINEWOOD DERBY:**

EACH PACK WILL SEND THEIR 1<sup>ST</sup>, 2<sup>ND</sup>, and 3<sup>RD</sup> PLACE WINNERS FOR SPEED AND THEIR 1<sup>ST</sup> PLACE WINNERS FOR DESIGN AND ORIGINALITY AT THE PACK'S OWN PINEWOOD DERBY EVENT.

THAT WOULD BE A TOTAL OF THIRTY (30) DIFFERENT SCOUTS FROM EACH OF OUR CARDINAL DISTRICT PACKS.

***THE DISTRICT RACE IS MARCH 2, 2024  
at the Islamic Center of Morrisville, 101A Quail Fields Ct,  
Morrisville.***