



**BOY SCOUTS OF AMERICA**  
**GRAND CANYON COUNCIL**



**RULES FOR THE 2018 THUNDERPEAKS PINEWOOD DERBY**  
**(Camelback, Four Peaks, and Thunderbird District Pinewood Derby)**

**Part 1. General Rules**

**1.1 GENERAL**

- A. Lack of knowledge of the official rules shall NOT be considered a valid argument for non-compliance.
- B. These rules are intended to maintain the competition at a level at which most Cub Scouts are capable of achieving with minimal adult intervention.
- C. All racers, parents, participants and attendees shall treat all officials, racers, and others in accordance with the Scout Oath and Law. Refusal to comply with event rules, refusal to follow directions from officials, or any other unsportsmanlike conduct may result in disqualification and/or ejection from the venue at the discretion of event officials.
- D. These rules are published on the event page, and are distributed at meetings and via other means of communication with Cub Scouts, leaders, and parents. Any questions regarding these rules should be directed to the Chief Event Official prior to the event. Any claim regarding the lack of knowledge of the rules shall be disregarded and will have no bearing upon any decisions of the event officials.
- E. In the case of any dispute or question regarding these rules, the determination of the Chief Event Official shall be final.

**Part 2. Car Specifications**

**2.1 GENERAL**

- A. The official car of the Pinewood Derby is the Grand Prix Pinewood Derby Racing Car. The car is available from any distributor of Official Boy Scout supplies. Racers are strongly encouraged to use the Grand Prix Pinewood Derby Racing Car; however, other car kits may be used, if the kit complies with ALL rules stated herein. Note that individual Packs may require the use of the official Grand Prix Pinewood Derby kit, at the Pack's discretion.
- B. The car shall not have been built prior to June 1st of the year preceding the event.
- C. The car shall be solely propelled by gravity, with no starting or launching devices.

**2.2 MATERIALS, DESIGN, AND CONSTRUCTION**

- A. The primary structural material for the car shall be wood. The use of the block provided in the Official Grand Prix Pinewood Derby kit is encouraged, but is not mandatory.
- B. Car designs or decorations that contain the following items are specifically prohibited:
  - a. Pornographic or sexual content
  - b. Explicitly violent content
  - c. Displaying or conveying gang affiliation
  - d. Displaying or implying illegal activity
- C. All materials used in the construction of the car shall be securely built into the body of the car or firmly affixed. No loose materials of any kind shall be permitted in or on the car.
- D. Liquids in or on the car are prohibited, except for lubricants between the wheel and axle.
- E. Additional items, such as a steering wheel, driver, decals, painting, or other accessories may be added to the car, as long as these items do not cause the car to exceed the maximum weight, length and width, or provide assistance in actively propelling the car.
- F. Fenders or other body width extensions, if used, shall be shaped and placed in a manner that shall allow complete and unhindered access to the exterior of the wheel to confirm conformance with all provisions of these rules.

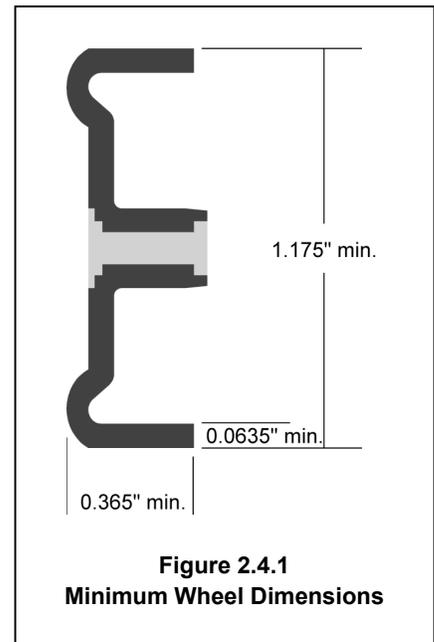
- G. The front of the car should be shaped in a manner that allows the car to contact the starting gate or pin without instability. The car shall not be shaped to allow the front of the car to protrude beyond the edge of the starting gate nearest to the car. A car, with the permission of the driver, may be run reversed (i.e. with the original front end placed to the rear). If the event officials are not able to adjust for a fair start, the protruding car shall be disqualified.

### 2.3 DIMENSIONS AND WEIGHT

- A. The overall length of the car (measured from the farthest point forward to the farthest point rearward) shall not exceed **7.00 inches**.
- B. The overall width of the car shall not exceed **2.75 inches** at the farthest lateral protrusions. A car shall fit entirely within its assigned lane, with no part of the car protruding into an adjacent lane.
- C. The width of the car body at the points where the axles are inserted should be approximately **1.75 inches** to ensure that the wheels will fit over the guide strip on the track.
- D. The car should have clearance from the lowest point on the car body to the track surface of no less than **0.375 inches** in order to allow for wheel inspection and to avoid contacting the guide strip of the track.
- E. The wheelbase, measured between the centers of the frontmost and rearmost axles, shall be no greater than **4.63 inches**. It is not required to place the axles into slots pre-cut in the wood block; however, the pointed ends of the axles shall be readily visible from the underside of the car.
- F. The maximum height of the car shall not exceed **4.50 inches**, in order to provide adequate clearance for common track timing mechanisms.
- G. The total weight of the car shall not exceed **5.00 ounces** (141.7 g), as measured by the official event scale. *Note: it may be a good idea to build the car to just below 5.00 ounces and add weight if needed at check-in, or be prepared to remove weight to conform to the official scale reading.*

### 2.4 WHEELS AND AXLES

- A. Only Official BSA Grand Prix Pinewood Derby wheels and axles, as provided in the official car kits or the official wheel and axle kits, shall be used. No other wheels or axles shall be permitted. The internal and external raised BSA PINewood DERBY lettering, spoke pattern, and serrated edges of the wheel treads shall remain visible and intact on all wheels. (*Note: Some kits purchased from other than Official Boy Scout suppliers may have wheels and axles that resemble official BSA wheels and axles, but will not meet the specifications. If in doubt, be sure to measure carefully, or use only unmodified Official BSA Grand Prix Pinewood Derby wheels and axles.*)
- B. The car shall have a minimum of four wheels. Wheels shall be in pairs, positioned across the body from one another to a tolerance of **0.5 inches**. A minimum of three wheels shall be touching the track surface at all times.
- C. The car shall not use bearings, spacers, bushings, or washers on the wheels or axles.
- D. The car shall not ride upon any type of springs or suspension.
- E. The wheels shall be free-wheeling.
- F. The outside diameter of each wheel shall be no less than **1.175 inches** at any point.
- G. The measurement from the outside of the farthest point of the outside of the curved wheel sidewall not inclusive of the raised lettering to the inside of the tread shall be no less than **0.365 inches** at any point.
- H. The thickness of the wheel tread shall be no less than **0.0635 inches** at any point.
- I. Any clearly visible evidence of machining of wheels shall be cause for rejection. Examples include, but are not limited to:
- a lip, step, or groove on the tread (such as "U" or "H" grooving)
  - a lip, step, or groove on the inside of the wheel not existing on a standard unmodified wheel (indicating removal of material from the inside of the wheel)
  - partial or complete removal of the internal lettering, external lettering, or spokes
- J. Polishing and/or step removal on wheel bores may be performed, but wheel bores shall not be otherwise modified.



- K. No covers, stickers, or hubcaps shall be allowed over the wheels or axles. All axle heads shall be fully visible and accessible.
- L. Axles may be filed, ground, or polished in order to remove protrusions or other imperfections.

## **2.5 LUBRICATION**

- A. Cars are expected to be lubricated prior to acceptance. Once a car is accepted, it shall not be lubricated except with the permission of event officials.
- B. Liquid lubricants shall be applied in a manner such that no residue shall leave the car or be deposited on the track or other surfaces.

## **Part 3. Event Rules**

### **3.1 GENERAL**

- A. No one except event officials and the Scouts racing at that time shall be allowed into the area immediately surrounding the track. Other areas, such as registration, inspection, and car storage, may also be designated as restricted, and shall not be entered except by event officials.
- B. Except as specifically directed by event officials, all persons shall remain behind all barriers and shall not obstruct the view of other spectators.
- C. If event officials find themselves in a conflict of interest situation, such a question on an issue involving their child or relative, they should recuse themselves from the issue and defer the issue or question to other event officials for resolution.

### **3.2 QUALIFICATION**

- A. Acceptance into a Pack Pinewood Derby shall not automatically denote acceptance into the District Pinewood Derby.
- B. Any Cub Scout in good standing within the Camelback District, Four Peaks District or Thunderbird District (either affiliated with a Pack or as a Lone Scout), or in a Pack chartered within these Districts as of December 31, 2017, is eligible to register. In the event that the Grand Canyon Council reassigns a Pack to a new District after December 31, 2017, the District assignment of that Pack as of December 31, 2017 will apply. Eligibility is not dependent on placing or performance in their Den, Pack, or Stake event. However, the top four places from each rank from each Pack or Stake are strongly encouraged to participate in the District event.
- C. Any Boy Scout who began the program year as a Cub Scout in good standing in these Districts who meets the eligibility criteria listed in Rule 3.2.B is eligible to compete in the class conforming to the rank they held prior to transition to Boy Scouts.
- D. The car shall be the same car that was raced in the Cub Scout's Pack Pinewood Derby in the same program year, unless the Cub Scout was unable to race in their Pack Pinewood Derby. Requests for exceptions to this rule shall be submitted to the Chief Event Official or their designee in writing in advance of the event for review, along with documentation as to why the exception should be granted. The decision of the Chief Event Official regarding exceptions is final.
- E. If another District in Grand Canyon Council does not hold a District-level Pinewood Derby in the same program year, a Cub Scout in good standing in that District may register and participate in this District event. All rules and specifications in this document shall fully apply to cars entered from other Districts, notwithstanding any rules that the other District or their Pack may have established for that program year.
- F. If a Cub Scout cannot be physically present to race their car, they may designate one other Cub Scout to act as their proxy for racing. The designated Cub Scout shall identify themselves to event officials as the proxy driver for that car, and shall abide by all rules. An adult may act as a proxy racer subject to approval by the Chief Event Official. Once made, this designation shall not be changed or transferred, except that the original Cub Scout may race the car if they are present.

### **3.3 CHECK-IN AND INSPECTION**

- A. Each car shall pass inspection by event officials before acceptance for racing. The Chief Event Official or their designee has the right to not accept any car that does not fully meet all specifications. If a car is not accepted, the owner shall be informed of the specific reason(s) why the car is not in compliance. Cars not accepted may be modified to fully meet all specifications and resubmitted for inspection if time permits prior to the close of check-in for its class. There is no limit on the number of re-inspections until the check-in time has expired.

- B. Once accepted by event officials, cars shall be placed in a holding area off limits to all persons except event officials. Cars shall not be removed from the holding area except with the specific permission of an event official.
- C. A number or other unique designation shall be assigned to each car, and this number or designation shall be affixed to the car as part of the check-in process. The number or designation should be clearly visible from the top of the car at all times.
- D. If a driver checks in after the close of check-in for their class but prior to the start of racing, the Chief Event Official may allow participation if time or scoring system permits.
- E. Any car may be re-weighed and/or re-inspected at any time for cause, which shall be at the sole discretion of the Chief Event Official.
- F. In the event a car is discovered to be in violation of a rule or specification after racing for its class begins, the event officials shall determine whether the car can be brought into full compliance with the rules and specifications. If the car can be brought into full compliance with the rules and specifications, the event officials may order that this be performed or else the car shall be immediately disqualified. If the car cannot be brought into full compliance with the rules and specifications, the car shall be immediately disqualified. At the discretion of the event officials, any previous races involving the car may be reviewed and either re-run or adjusted to compensate for any violation.

### 3.4 CLASSES

- A. The rank-level classes for Cub Scout racing are defined as follows:
  - Lion / Tiger (combined)
  - Wolf
  - Bear
  - Webelos (first year)
  - Arrow of Light (second-year Webelos)
 Open Class racing may also be offered. Categories are specified in the rules section on Open Class.
- B. Cub Scouts shall compete in the same class as they did in their Pack races. For units not utilizing a two-year Webelos program, fourth graders shall compete as Webelos, and fifth graders will compete as Arrow of Light. If the Cub Scout was unable to participate in their Pack race, they shall compete in the class conforming to their current rank, unless modified or changed by the event officials.
- C. A Cub Scout may, with the approval of the Chief Event Official, race in a class involving an older age group in lieu of their own age group, but shall not race in a class involving a younger age group.
- D. A Cub Scout may enter a car in both their rank class and in Open Class (if provided). The car entered into Open Class need not be the same car as entered in their rank class.

### 3.5 HEATS

- A. Prior to the start of each class of races, the event officials should announce the race procedures, including timing and/or scoring, elimination procedures (if used), and advancement to a championship round (if offered).
- B. Cars shall race at the times, in the order, and in the lanes as directed by the event officials.
- C. Each heat shall be announced. Drivers shall report to the starting line when announced. Car placement shall be as directed by the event officials.
- D. An event official in charge of starting shall oversee the placement of the cars properly on the track, and shall start the race when ready. This official shall be the judge of which cars are to race, placement of cars on the track, and other issues in the starting area. This official shall also have the primary task of determining "false starts".
- E. The finish line shall be supervised by a minimum of one event official. This supervision can either be by direct observation, or by electronic equipment, or both. This official shall have the primary task of determining if the race proceeded without incident, and shall immediately notify other event officials if an incident occurs or if any other discrepancy is observed that could be an indication of an unfair race.
- F. Each car shall race at least once in each lane designated for use in the series of heats for that car's class.
- G. The results of each heat shall be recorded by place, elapsed time, or both.
- H. At the completion of each heat, the drivers or designated officials shall retrieve the cars from the finish area and place them at the direction of the event officials.
- I. If a car has completed racing or has been eliminated from competition, the car may be removed from the holding area, subject to the approval of an event official.

- J. If during a race, a car leaves the track, runs out of its lane, interferes with another car, or loses a wheel, axle, or other part(s), the race may be run again at the determination of the event officials. There shall be only one repeat race for this reason in any heat. If the same car has a problem again, the results of the repeat race shall stand, unless the problem car clearly interferes with another car, in which case the interfering car shall be declared to be in last place for that heat and scored accordingly.

### 3.6 TIMING AND SCORING

- A. Timing and/or scoring shall be by a manner approved the Chief Event Official.
- B. In the event of a tie for a place that involves an award and/or advancement to a higher round, the cars tied for that place shall compete in a race-off limited to those cars to determine the final position. Each car shall race at least once in each lane used for the race-off. Should the result of the race-off be a tie, the race-off shall be repeated until a winner is determined.
- C. The top four places for each rank class shall race against each other for the District Championship using the same format as the rank-class races.

### 3.7 REPAIRS

- A. An official Pit Area shall be provided for repairs and alterations.
- B. If repairs are needed after racing begins, they may be permitted at the discretion of a responsible event official. All repairs after acceptance shall be performed under the direct supervision of an event official. The official in charge of the pit area shall be the sole judge of what repairs are necessary and permissible. If wheels or axles are replaced after acceptance, only those wheels or axles actually replaced shall be lubricated.
- C. If a car requires repairs, the heats for which that car is scheduled may be deferred until such time that the car is either repaired or withdrawn. If practicable, other heats within the same class may continue while repairs are made. If no other heats can be run without the participation of that car and a subsequent 10 minute period elapses, the driver and car shall be called to race, and upon failure to report to the starting line at that time, shall forfeit.

*(Note: It is highly recommended that racers bring their own spare parts and tools, and be prepared to make their own repairs if necessary.)*

### 3.8 AWARDS

- A. Awards shall be made based on placing as determined by official scoring. Trophies are awarded for first through fourth place in each rank class, and for first through fourth place in the championship round.
- B. Other prizes and awards may be given depending upon availability. Such awards shall be made at the discretion of the event officials.

## Part 4. Rules Modifications For Open Class

- A. Open Class racing, if offered, is open to all Cub Scouts, Boy Scouts, Leaders, parents, siblings, relatives, friends, or other persons associated with the Boy Scout program, or to other persons with the permission of the Chief Event Official.
- B. There are four categories of Open Class. These categories may be modified or consolidated at the discretion of the event officials based on participation, time, or other factors.
- Youth Class
  - Stock Class
  - Unpowered Class
  - Powered Class
- C. Youth Class racing is intended for girls and boys under the age of 18. Youth under the age of 18 may compete in Unpowered or Powered Class as well.
- D. For Youth or Stock Class cars, all standard rules shall fully apply, with the following exception:
- a. Cars from previous years may be entered.
- E. For Unpowered Class cars, all standard rules shall apply, with the following exceptions:
- a. Cars from previous years may be entered.
  - b. The total weight of the car shall not exceed 16 ounces (453.6 g).
  - c. Additional items or accessories may be added to the car, as long as these items do not cause the car to exceed the maximum weight and width, or provide assistance in actively propelling the car.
  - d. The rules regarding overall length, wheelbase, and wheel position are waived.

- e. The rules regarding wheel type, number of wheels, wheel dimensions, axles, bushing, spacers, and bearings are waived, except that all wheels shall be made of plastic.
- f. The front of an Unpowered Class car may protrude beyond the starting gate; however, forward movement of the car shall be restrained by the starting gate prior to the start of the race.
- F. For Powered Class cars, the rules for Unpowered Class shall apply, with the following additional modifications:
  - a. Starting, launching, and propulsion systems are permitted; however, any method of starting, launching, or propulsion employing any sort of combustion, such as rocket engines, fuel-powered motors, or any other type of burning fuel, or that has any potential for damaging the track, spectators, or the venue, is expressly and completely prohibited.
  - b. Additional items or accessories may be added to the car, as long as these items do not cause the car to exceed the maximum weight and width.
- G. Any Open Class car that leaves the track for any reason during a race shall be immediately disqualified (*keep this in mind when designing guidance and propulsion.*)
- H. A driver may register separately for each category in Open Class, and may enter the same car in each category; however, the car shall fully conform to the rules for the applicable category when racing in that category.
- I. All decisions on Open Class entries, qualifications, and/or race results made by the Chief Event Official shall be final.

Any questions regarding these rules may be directed to:

- Richard Moeur, District Co-Chair and Chief Event Official, [rcmoeur@aol.com](mailto:rcmoeur@aol.com), (602) 909-8451
- Bob Weaver, District Co-Chair and Chief Inspector, [jusbobweaver@gmail.com](mailto:jusbobweaver@gmail.com)
- Amy Carden, District Co-Chair, [cardenclan@cox.net](mailto:cardenclan@cox.net)

version 1.1 - 01/17/2018 (added Camelback District, clarified eligibility in case of District realignments, revised boy-specific terms for gender neutrality to reflect female Cub Scout participation)

version 1.0 - 11/01/2017 (adapted from 2017 rules - changed references from "boy" to "Cub Scout", added requirement for paired wheels, changed "Sibling Class" to "Youth Class", modified Unpowered Class rules re starting gate)