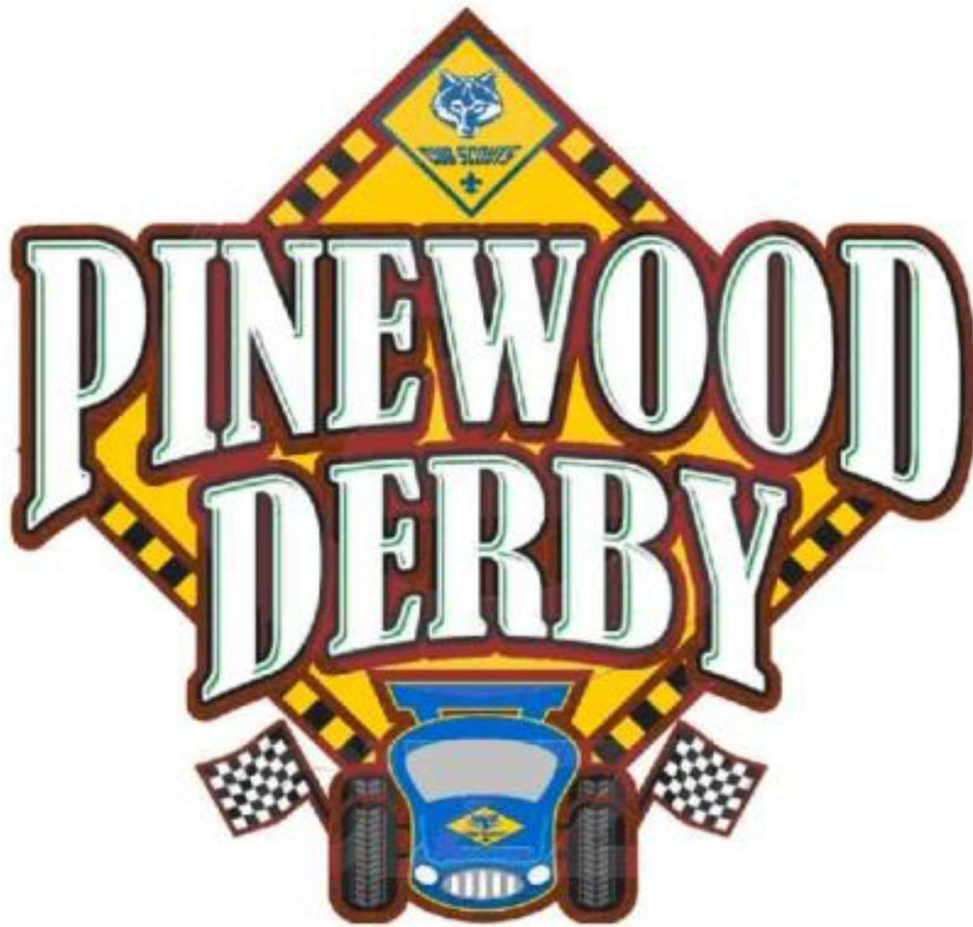




New Birth of Freedom Council

Keystone Capital District

# 2024 PINewood DERBY RULES



## I Notable rules for 2024

- A** The 2024 Keystone Capital District Pinewood Derby (Derby) will be held on **Saturday, March 16, 2024**.  
The Derby will be held at the Holy Name of Jesus Church Gymnasium at 6200 Dogwood Drive, Harrisburg. The New Birth of Freedom Keystone Capital District is honored to have you participate in our District Pinewood Derby. The Pinewood Derby has been a part of the Cub Scout Program since 1953. As its popularity has grown over the last six decades, the Pinewood Derby has evolved, and different Councils have adopted different rules for competition. These rules have been developed to ensure that this derby is representative of all cub scouts and allows all qualifying scouts to compete on a level competition field.
- B** Section III. D. allowed for Lions to join the District derby in 2018.
- C** Section VI. L. states that wheel washer weights or weights that are positioned on or within one or more of the wheels are prohibited. These types of weights are difficult to inspect and may include washers to provide a significant advantage to participants that use them. Additionally, these types of weights may be economically prohibitive to some scouts.
- D** Section VI. B. states that lathed or thinned wheels are prohibited. Light sanding of the wheels is the only wheel modification permitted. Some online vendors sell aftermarket BSA wheels that have been lightened by removing material from inside the wheel surfaces. Per Section VI. B. these wheels are NOT allowed and are easily recognized at inspection. Cars with these wheels will NOT be permitted to race. If you plan to use aftermarket wheels, confirm with the vendor that no weight is removed from the wheel.
- E** Section IV. G. has been one of the most overlooked rules the last few years. Section IV. G. states the front of the car shall be flat on the bottom and not shaped up. Please read this section and ensure your car complies with the rule or you will find yourself at the Pit Crew Garage gluing Popsicle sticks to the bottom of your car. Cars not complying with this rule have an advantage at the start and can get off the starting pin before cars conforming to this rule.
- F** Section IV. C. states the minimum clearance between bottom of car and track shall be 3/8 inches. If you add weights to the bottom of the car make sure you have 3/8 inches clearance, or your car can make contact with the track, slowing it down or worse causing the car to leave its lane. Do not simply attach weights to the bottom of the car or there is a good chance your car will not pass inspection.
- G** Section IV.D. states the maximum length shall not exceed 7 inches. In the past, some of the car kits have had the block cut just over 7 inches, so double check the length and cut it 7 inches or less or you will find yourself in the Pit Crew Garage sanding and scraping the length. Longer cars can make contact with the track at the transition between the incline and level sections, slowing it down or worse causing the car to leave its lane.
- H** **And remember NO GRAPHITE IS ALLOWED IN THE Holy Name of Jesus Church Gymnasium. No exceptions!**



## II General Derby Information:

- A The 2024 Keystone Capital District Pinewood Derby (Derby) will be held on **Saturday, March 16, 2024**. The Derby will be held at the Holy Name of Jesus Church Gymnasium at 6200 Dogwood Drive, Harrisburg.
- B Doors open and Derby Registration begins at 8:00 AM. The official start of the Derby will be at approximately 9:00 AM. After the official start no additional participant registrations will be accepted. The Derby is expected to last until 12:30 PM. Estimated length depends on number of participants.
- C Entry fee will be \$10.00 per car for Scouts.
- D Participants must design and build their own cars with minimal adult assistance. Participants may use a car that was raced in their Pack's 2024 Pinewood Derby or they may build another car for the District Derby as long as the district entry complies with the Rules.
- E Each participant will name their car. Heat winners will be displayed by the car name and participant name.
- F **And remember NO GRAPHITE IS ALLOWED IN THE Holy Name of Jesus Church Gymnasium. No exceptions! BEFORE CARS ENTER THE BUILDING** dry powder lubricants may be used, like graphite.
- G Please read the 2024 Pinewood Derby Rules (Rules) carefully prior to building your car, the Rules apply to all participants. Any violation of the Rules may result in disqualification.
- H Additional information and resources can be found at the Boy Scouts of America Official Pinewood Derby website: <http://www.pinewoodderby.org>
- I There will be a concession stand with snacks and drinks available for purchase.
- J Volunteers are needed for the concession stand and serve as Pit Crew members. We hope to have AT MINIMUM, ONE person from all Packs in the District.
- K REMEMBER – THIS IS A CUB SCOUT EVENT AND SPORTSMANSHIP IS OF THE UTMOST IMPORTANCE.

### III Ground Rules:

- A And remember NO GRAPHITE IS ALLOWED IN THE Holy Name of Jesus Church Gymnasium. No exceptions!**
- B** All Scout participants shall be registered Scouts. Scouts that began the calendar year as a Webelos Scout and have since transitioned to a Troop are eligible to compete. It is recommended that all Scouts wear their "Class A" uniform.
- C** Each participant must race their car. No substitute participants are permitted.
- D** The seven (7) race classifications include 1) Lion, 2) Tiger, 3) Wolf, 4) Bear, 5) Webelos I, 6) Webelos II (Arrow of Light), and 7) Friends & Family.
- E** The Race Committee will announce the official start of the Derby. After the official start of the Derby no additional participant registrations will be accepted.
- F** All cars entered shall be constructed from a current year official BSA Scout Pinewood Derby Car Kit. The Derby Car Kits are sold at the scout store, [www.scoutstuff.org](http://www.scoutstuff.org), and craft stores in the Harrisburg area. All cars must be constructed for this year. Cars used in a previous year(s) are prohibited.
- G** Only one car may be entered per participant in the Derby. Cars made by siblings, other family members or friends will be raced alongside Scout racers.
- H** Participants must use the block of wood provided in their BSA Scout Pinewood Derby Car Kit.
- I** The race will be judged by total time over several heats. The Race Committee will determine heat-scheduling method.
- J** An electronic timer will be used to record individual car times and averages will be computed via computer.
- K** Car problems and lane violations:
- i** If a car problem occurs, Pit Crew members are the sole responsible party to check the car for problems with the participants. Participants may be assisted in making repairs by their parent/guardian or Adult leader. Pit Crew members shall oversee all repairs.
  - ii** If a car leaves the track with or without interfering with its opponent(s), it shall be considered to have committed a lane violation and ended its heat at that point.
  - iii** For lane violations that involve interference, heats shall be run again.
  - iv** If a car leaves its lane, Race Master may inspect the track and, if a track fault is found which may have caused the initial violation; the Race Master may order the heat may be run again after the track is repaired.
  - v** If a car does not reach the track finish line, the car shall be considered to have committed a lane violation.
  - vi** If a car suffers a mechanical problem, such as the loss of an axle, a broken wheel, etc., and a repair can be accomplished in a reasonable time (about 5 minutes), the heat shall be run again. If not, the car shall be considered to have committed a lane violation and automatically lose the heat.
  - vii** Cars that commit lane violations may still participate in the Derby, unless it is a flagrant violation as determined by the Race Committee. The time and speed results for cars that commit lane violations shall not be included in determination of overall ranking of cars for final awards.

- L** Only Pit Crew members will be allowed in the registration, pit and finish line areas. Pit Crew members shall place all cars in the impound area, will place cars on the starting line and remove cars from the finish area.
- M** Participants will recover their cars at the finish area and return their car to race officials. Participants must remain in the designated area to watch their car race and are expected to follow directions from all track officials.
- N** Only one (1) car per participant may be entered and can only be raced in one classification. (Example: The same car cannot race in Tigers and Bears, or Wolves and Webelos, etc.)
- O** Substitute cars are prohibited.

#### **IV Dimensions:**

- A** Maximum overall width including wheels and axles shall not exceed 2-3/4 inches.
- B** Minimum width between wheels shall be 1-3/4 inches.
- C** Minimum clearance between bottom of car and track shall be 3/8 inches.
- D** Maximum length shall not exceed 7 inches.
- E** Maximum height shall not exceed 4 inches.
- F** Allowable wheelbase between 4-1/4 inches and 4-1/2 inches as measured from centerline to centerline of the axle slots. It is permitted to true the original slots or cut new slots. If the participant trues the original slots or cuts new slots, the slots must be cut so that the entire length of the axles can be inspected. The trued slots or new slots must be spaced apart (or have a wheelbase of) between 4-1/4 inches and 4-1/2 inches.

The front of the car shall be flat on the bottom and not shaped up. The front sides and top of the car may be shaped, but must have a minimum 1/2-inch wide x 3/16" high section that is flat, squared and centered on the front so that the car may rest on the starting pin properly. "V" fronts and "V" notched front ends are prohibited. No part of the car shall extend over the top of or in front of the starting pin on the racetrack. If the front of the car is designed to gain an unfair advantage by shortening the distance between the start pin and the finish line sensor, or the car design otherwise interferes with a fair start, race officials reserve the right to require the racer to modify the front of the car to eliminate the advantage, or the car will be disqualified. See Section IX, Part B Figure 2 Front End Details for more information.

#### **V Weight and Appearance:**

- A** Weight shall not exceed five (5) ounces. The readings of the Official Race Scale shall be considered final. The wooden car may be hollowed out and built up to the maximum weight by the addition of wood or metal or plastic; provided it is affixed securely to the car. No loose materials of any kind are permitted in or on the car. Using tape to hold weights, coins, or washers to the car may not qualify as "affixed securely"; items held in such a manner may be disqualified.
- B** Cars must be powered by gravity only. Engines, rubber bands, wind up motors, springs or any other enhancement devices used for propulsion are prohibited. No part of the car may intentionally detach



from the car, or extend outside the allowed dimensions at any time, or come into contact with any other car during the race. Movable or liquid weights that shift the center of gravity of the car when the car is tipped or rolled are prohibited.

- C** Details such as steering wheel, driver, spoiler, decals, painting or other attachments to the car are permissible as long as these details do not exceed the allowable specifications in the Rules.
- D** Use of electronics to create any kind of propulsion or inertial force is prohibited. Electronics are allowed for appearance. Examples of acceptable electronics include LEDs, phototransistors, microprocessors, batteries, transistors, relays, transmitters to cause lights or effects, etc.
- E** Hubcaps are prohibited. If a car has hubcaps the racer must remove the hubcaps before inspection and impoundment.
- F** Mercury shall not be used for adding weight.

## **VI Wheels and Axles:**

- A** Only the official BSA Scout Pinewood Derby Car wheels and axles can be used. Older version wheels and axles are prohibited. BSA Scout Pinewood Derby Car colored wheels are permitted.
- B** Lathed or thinned wheels are prohibited. Wheels may be lightly sanded to remove the mold projection of the tread. Light sanding of the wheels is the only wheel modification permitted. Original wheel tread width and thickness is required. Beveling, tapering, thin sanding, wafering or lathe turning of the wheel exterior tread or interior is prohibited. Tread surface must be flat and parallel to the wheel bore. For examples of permitted and prohibited wheels, see Section IX, Part A Figure 1 - Details for Wheels.
- C** All wheel lettering and numbering, both inside and outside, must remain complete and be visible. The fluting and other BSA markings on the outside wheel area must remain visible.
- D** The axles must be attached and inserted directly into the axle slots on the wood block of the car. Applying wood putty in the axle slots or using a drill press to make holes to insert the axles or any other means to cover the axles is prohibited. Bearings or solid one-piece rod style axles are prohibited. Participants must ensure that the entire length of the axles can be inspected.
- E** Participants may straighten the axles or may use bent axles.
- F** Wheels must not be angled more than twenty (20) degrees from vertical.
- G** The car shall have four (4) wheels and axles; however, only three (3) wheels are required to make contact with the track. You may raise one wheel off the track surface.
- H** The wheels are the only part of the car allowed to touch the track.
- I** Axles may be sanded and polished. Participants may polish the axles to remove machining marks from the axle shafts. Participants may taper axle heads as long as the diameter of the axle or axle head are not reduced.
- J** Drills with mandrels may be used to lightly sand wheels and polish axles.
- K** Any types of wheel bearings, Teflon, washers, inserts, sleeves or bushings are prohibited.
- L** Wheel washer weights or weights that are positioned on or within one or more of the wheels are prohibited.
- M** The car shall not ride on any type of springs.
- N** The car shall be freewheeling with no starting device or other propulsion.

## VII Lubrication:

- A NO GRAPHITE IS ALLOWED IN THE Holy Name of Jesus Church Gymnasium. No exceptions!**
- B** Only dry powder lubricants may be used, like graphite, **BEFORE CAR ENTERS THE GYM**. Any part of the car may be lubricated.
- C** Oils and silicone sprays are prohibited as they may damage and/or cause performance issues on the track.
- D** Cars may be lubricated before inspection. No further lubrication shall be permitted. Once the car is impounded after the inspection, the car may NOT be re-lubricated
- E** Hubcaps or coverings that conceal the axle end are prohibited.
- F** Lubricant reservoirs that are built into the car are prohibited.
- G** Over application of lubricant, which results in excessive shedding onto the track is not allowed.

## VIII Inspection and Disputes:

- A** Each car must pass inspection by the Pit Crew before it may compete. The Pit Crew has the right to disqualify cars that do not meet the Rules. After a car passes the inspection it is impounded and no other modifications to the car may be made. Cars remain impounded until the completion of the derby.
- B** Participants shall be informed of the violations and given an opportunity to modify the car to meet the Rules. Any modifications must be made prior to the official start of the Derby.
- C** The Pit Crew includes but is not limited to: the weight inspector, the dimension inspector, the wheel and axle inspector, the Pit Crew Chief, the Track Master and the Race Master. There may be more members of the Pit Crew at the registration and inspection tables as determined necessary by the Race Committee.
- D** Any participant has the right of appeal to the Race Committee for the interpretation of the Rules. The Race Committee, by majority vote, shall be the final judge of the Rules. In case of a tie vote, the decision of the Race Master shall be final.
- E** Any participant has a right of appeal to the Race Committee if the participant disagrees with a Pit Crew's ruling during a race or with the outcome of a race; however this must be done during a race heat or immediately following. The Race Committee, by majority vote, shall determine the validity of the appeal. In case of a tie vote, the decision of the Race Master shall be final.
- F** After the car is impounded, cars will not be re-inspected unless the car is damaged during the Derby. Cars may also be re-inspected if the Race Committee becomes aware of a Rule violation. The Race Committee reserves the right to inspect and disqualify a car for failing to comply with the Rules at any time during the Derby.
- G** In the event a car is disqualified for failing to comply with the Rules, it may still participate in the Derby, unless it is a flagrant violation as determined by the Race Committee; however the time and speed results for the car shall not be included in determination of overall ranking of cars for final awards.
- H** Ungentlemanly or unsportsmanlike conduct by any participant or member of the audience shall be grounds for expulsion from the Derby.



- I No individual shall interfere with the Pit Crew, Race Committee or race officials while a race is running.

**IX Friend & Family**

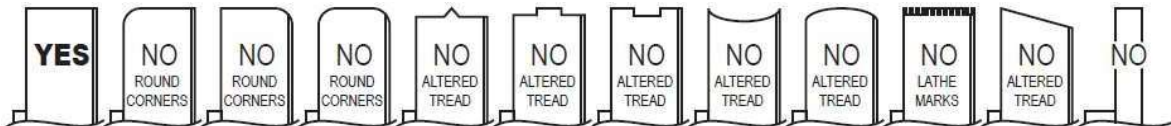
- A The 2024 Keystone Capital Pinewood Derby will be including Friends and Family Derby Cars in the 2024 District race.
- B Friends and Family Derby Cars MUST abide by all rules outlined in this document for entry into the 2024 District race
- C Friends and Family participant entry fees will be the same as the Scout fees for racing.
- D Friends and Family participants will NOT be eligible for NBOF District Pinewood racing trophies.

**X Awards:**

- A Awards will be presented for fastest time with 1st, 2nd and 3rd place finishers for each classification; as well as 1st, 2nd and 3rd place finishers for the District overall. Friends & Family participants are not eligible for District overall awards.
- B Friends & Family participants are not eligible for District overall awards.

**XI Figures:**

- A Figure 1 - Details for Wheels. (Also see Section VI. B. that states lathed or thinned wheels are prohibited. Light sanding of the wheels is the only wheel modification permitted.)



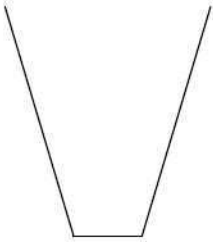
- B Figure 2 – Front End Details





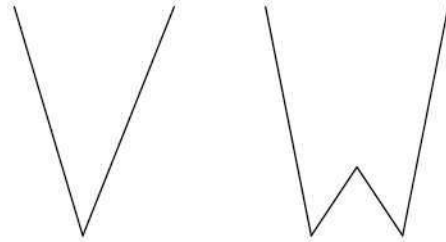
**Details for Front Notching Looking down at the car**

**Acceptable**



**(Not less than 1/2")**

**Unacceptable**



("V" Nose)

("V" Notch)