PINEWOOD DERBY RULES

# ENTRY

* Each entry must pass inspection; then be registered with the Official Registration Team before it may compete. The inspection/registration table will be open Friday night before the derby on Saturday.
* All cars will be inspected for the items listed in the Specifications section of these rules. An owner will be informed of any noncompliance. Modifications may be made and the car re- submitted for inspection by returning to the end of the inspection/registration line. Maintenance and/or lubrication is prohibited after inspection.
* A car that has passed inspection will be immediately considered registered. The car owner's name and den will be recorded and a unique identification will be placed on the car so it may be visible from the top/back if at all possible.
* Once registration is complete, the car will be moved to the pit area as instructed by the Race Official. After the car is registered, repairs will be limited to replacement of axles/wheels that are broken/lost during the race. All owners and spectators will remain outside the pit and track area at all times, except as directed by a Race Official.

# SPECIFICATIONS

**Body Specifications / Dimensions**

* + Width: Overall width (including wheels) shall not exceed 2 3⁄4 inches.
    - Do Not Alter The Width Of The Car At The Axles
  + Length: Overall length shall not exceed 7 inches (17.8cm)
  + Height: Overall height shall not exceed 3 inches.
  + Weight: not to exceed 5.0 ounces – 143.4 grams measured on Official Race Scale
    - Overweight cars may be reduced to 5.0 ounces (143.4 grams) or below before they can officially be entered, at the Race Day Check in.
  + Center Rail Clearance:
    - Cars must be clear the center rail which is 1 5/8 inches wide by 1⁄4 inch tall along the entire length of the car.
  + Wheelbase:
    - Can be extended. Standard wheelbase is 4 3/8 inches from the center of front axle to center of back axle. Any wheelbase can be used. Wheels must be directly across from one another.
    - Axle holes may be drilled into body of car as long as the specs are met.
  + Body Structure
    - The main body structure must be made of pinewood.
    - Wheelbase front and rear axles may be modified, as long as the overall length does not exceed 7 inches.
    - No part of the car can extend past the start gate.

# Construction and Materials

* + The car must have been constructed within the last eleven months.
  + Liquids and loose materials of any kind, in or on the car are not acceptable.

# Wheels

* + - Only official BSA wheels are allowed. Either *(either new style and/or old style).* All markings must be in tact on inside and outside of wheel. You may use official BSA colored wheels.
    - Outer wheel surface may be sanded, shaved, lathed or polished to remove any imperfections, true roundness, remove model castings and burrs, but must not be reshaped in any way to minimize tread contact or alter aerodynamics.
      * The Fluting (small decorative dots) must be visible around the entire circumference.
      * The tread/ contact surface must remain flat and parallel to the bore.
      * The width of the tread must not be less than 7.5 mm
      * No removing or reducing the letters or spokes or drilling additional holes.
      * The following wheel modifications are NOT allowed
      * No rounding of the wheel treads – they must remain flat
      * No grooving, H-cutting, V-cutting, Crowing, Tapering or Dishing
      * No altering the wheel profile
        + No drilling sidewalls
        + No filling of any wheel surface with any type of material.
        + Officials will remove wheel(s) if lettering is not completely visible.
        + Coning the hubs, truing the inside edge of the wheel, and removing the outer hub step down is allowed.
        + Wheel Bore treatment is allowed including polishing, sanding and / or tapping.
        + Wheel bores may not be filled and re-drilled
        + Any wheel sanding, shaving or lathing on the inside of wheels must leave all inside wheel lettering and mold markings in tact and visible.
      * There must be four wheels on the car, however it is not required that all four wheels make contact with the track surface – one wheel may be lifted from the track surface.
        + Each wheel must be mounted on an axel, on the outside of the car, on the side of the car
        + Wheels may not be greater than 10 degree of an angle from the body of the car
        + Each wheel must be attached by an axle – no guide pins allowed.
        + Wheels must be installed directly across from one another
        + Wheels may NOT be reversed – wheels must be run in standard position

# Axles

* + Non-Dominant / Lifted wheels must meet wheel specifications.
    - Nail type axles but not limited to those found in the Official Pinewood Derby kit are to to be used.
    - Modifications to the Axles are allowed that include straightening, sanding, polishing, canting, grooving, beveling, & tapering of axle head as long as the Diameter of the axle is not reduced. The Diameter may not be less than .084 inches (2.13mm)
    - Axles can be mounted by drilling Axle holes or inserted into the slots on car.

# Accessories

* + - Aftermarket accessories and decorations are allowed as long as they are firmly attached to the car and meet all other size specifications. No excessively fragile or glass items are allowed.

# Lubrication

* + - Graphite ONLY in all divisions

# Prohibited Items that can NOT be used

* + - Magnets, springs or suspension systems of any type.
    - Starting devices finish line devices, propellants, or propulsion systems
    - Wet paint, or sticky substances
    - Glass or excessively fragile parts
    - Electronic or lighting devices (if lights are on the car they must be turned off)
    - Wheel bearings, wheel covers, washers and bushings are not acceptable.
    - No use of Guide Pins or such devices
    - Axles and wheels attached to any device that mechanically alters rotation or spin.

# Logistics

* + - A six-lane track with electronic timer and starting line will be employed.
    - Each car will be run on each lane with the race times being totaled.
    - Cars will be assigned a different lane in each heat, such that each car will have raced in all six lanes.
    - The individual cumulative totals for the six heats will be used to determine the winners of the event.
    - Each race will be announced and the cars placed on the start line by a Race Official(s).
    - The Starting Line Race Official will make sure the cars are on the track properly, wait for the Computer Ready Signal from the Race Chairman and start the race.
    - If a car leaves the track, runs out of its lane, interferes with another car, or otherwise fails, the car will be disqualified from that heat. If on the second run another car is interfered with, the race will be rerun without the disqualified car. The disqualified car will be assigned a time equal to 9.999 seconds.
    - When the cars come to a complete stop at the finish line, the Finish Line Race Official will place the cars in a protective transport box and return the cars to the pit area.
    - If it is the Race Chairman’s opinion that the electronic timer has failed to properly perform, the race will be rerun.
    - This process will be repeated until all cars from all groups have run in all six lanes.

# Awards

* + - After each den’s races have been completed, awards will be presented.
    - Trophies will be awarded to:
      * 1st, 2nd & 3rd in each rank (Lion, Tiger, Wolf, Bear, Webelos, AOL)
      * Best Desing in each rank (Lion, Tiger, Wolf, Bear, Webelos, AOL)