**PINEWOOD DERBY RULES – REVISED FOR 2023**

Compiled by Rich Dush, edited by Sheri Price

**ALL CARS MUST MEET THE FOLLOWING RULES AND SPECIFICATIONS**

1. For the Council race, each participant may enter only one (1) car. The car must be built for the same year it is to compete. No car that has raced in previous years is eligible.
2. The Cub Scout needs to be present for the car to compete. Any exception, such as hospitalization, may be considered by the Race Committee, provided that they are notified as far in advance as reasonably possible.
3. The race may be an elimination event or a best time event. The format used will be determined by the Race Committee prior to the start of the race.
4. ONLY the official Cub Scout Grand Prix Pinewood Derby body, wheels, and axles are to be used. The finished car will meet the following specifications.
	1. Width – overall width will not exceed 2 ¾”
	2. Length – overall length will not exceed 7”

NOTE: Wheels are not permitted to extend beyond the front or rear of the car body.

* 1. Width between wheels – The width between wheels will not be less than 1 ¾”
	2. Bottom Clearance – Clearance between the car and tract will not be less than 3/8”
	3. Height – overall height will not exceed 5 ½” so that it will clear the track timer
	4. Appearance – the underside of the completed car must visibly display natural wood

NOTE: The design of the car is part of the fun, so we want to see the Cub Scout Racer’s creativity. The underside is the only area that MUST display natural wood.

* + 1. Other details such as steering wheel, driver, paint, decorations and decals are permitted so long as these details do not cause the car to exceed the width, length, height, and weight specifications.
		2. All items must be securely attached to the car.
		3. The cars will rest against a starting pin. Therefore, it is advisable that they do not come to a sharp point in the front. The car nose must be flat (not pointed) for at least 3/8” where it contacts the starting pin.

NOTE: Any car with wet paint, wet glue, etc. at the time of registration shall not be accepted. No part of the car is to be sticky or tacky to the touch.

* 1. Wheel Dimensions – there will be no significant changes to the wheel dimensions
		1. Outside Wheel Diameter (OD) – the OD will not be less than 1.170”
		2. Overall Wheel Width – the overall wheel width, including sidewall, will not be less than .320”

NOTE: Wheels may be sanded, lathed, or filed to smooth out molding imperfections in the tread area. Angled (canted) axles and/or wheels are permissible. The contact surface of the wheel must be flat as it sits on the track. Beveling, tapering, significant rounding, pointing, shaving, concave, wafering, etc. of the wheel contact area is prohibited. All wheels must have the raised BSA – PINEWOOD DERBY lettering on the outside surface of the wheel. (See Pictures & Notes)

* 1. Axles – The head of the axles (nails) must be visible for inspection

NOTE: Angled/canted axles are permissible. Axles may be polished, cleaned, rounded, etc. and stamping imperfections removed

* 1. Weight – the weight will not exceed 5.0 oz. (141.7 grams) as weighed on the Official Race Day Scale

NOTE: Only one scale will be designated as the official scale.

DESIGN NOTE: Weights may be added to the car, but must be securely attached. The car body will have no moving parts that may impact the car’s speed.

NOTE: A Go-No Go Measuring Device may be used to measure both the car body and its wheels. A car that is within the specifications detailed above will fit into the device with he door closed and pass wheel inspection.

1. The use of wheel and axle lubricant is permitted. Wheel and axle lubricant may be of dry powder type (such as powdered graphite) or liquid oil.

NOTE: Solid powders, flakes, or oils (e.g. graphite or Teflon) may be used so long as no excess is visible and will not harm the track. No lubricant is permitted which may alter the race conditions of the track.

1. All cars must be powered by gravity only. The car may not use a starting device or be constructed or treated so that it uses the track’s starting mechanism to gain momentum.
2. Each car will be assigned a number for the race. That number (sticker) must be attached to the top of the car in such a manner that the front end of the car is easily identifiable by the Race Committee.
3. PROHIBITED MATERIALS: The following materials are prohibited and their use will result in disqualification.
	1. Wheel bearings, washers, sleeves and bushings
	2. Springs
	3. Wheel covers or hubcaps
	4. Liquids, Magnets, and slip weights
	5. Parts made to intentionally come off during the race or interfere with another car
4. After check-in, inspection, and weigh-in the car will be impounded - you will not be allowed access to the car. A car cannot be repaired, lubricated, etc. after weighing-in , except at the discretion of the Race Committee. Race Committee Officials may authorize repairs when damage is caused by collision with another vehicle or object, or if an essential part of the car falls off deeming it unable to continue in competition (such as a wheel).
	1. Repairs must be completed within a limited amount of time determined by the Race Officials.
	2. Cars that are repaired may be re-checked at the discretion of Race Officials.
	3. Other exceptions may be allowed at the discretion of Race Officials.

NOTE: Any part of the car that falls off and is not required for the car to race (i.e. plastic driver, weights, decals, etc.) may not be replaced or repaired.

1. Any part of the car that becomes loose, causes, or may cause interference with another car must be removed as determined by the Race Committee.
2. No part of the car will be permitted to extend past the starting pin. Cars which do have the front end extend beyond the starting pin may be raced backwards, providing none of the rear of the car extends past the starting pin. Any modifications must be made prior to inspection and weighing in.

NOTE: If, after a reasonable effort is made to stage the car at the starting line and it is still unable to be properly lined up, the Race Committee may either disqualify the car or allow the car to be modified in order for it to be staged. Race Officials may reinspect the car.

1. FAILURE TO FINISH AND LEAVING TRACK: The following rules and procedures relate to cars that may not cross the finish line for a variety of reasons.
	1. If, during a race, no car reaches the finish line on the track, the car that went the farthest in its lane shall be declared as the heat winner. If it is a best time event, then a time will be assigned to any car that fails to cross the finish line.
	2. If a car leaves its lane or fails to reach the finish line, the Race Chairman at his or her sole discretion may inspect the track and, if a track fault is found which probably caused the initial violation, the Race Committee may order the race and/or car(s) to be rerun after the track is repaired.
	3. If, during a race, a car leaves the track without interfering with its opponent(s), and is not caused by a track fault, it shall be considered to have ended its heat at that point.
	4. If, during a race, a car leaves its lane and in doing so interferes with another car, then the car at fault shall be declared to have lost the race heat. If three or more cars are racing, the car causing the interference will not be permitted to run in that re-race. If a best time event, the car(s) that were interfered with will be re-raced and the car that caused the interference will be assigned a time or will be considered as Did-Not-Finish for that heat.
	5. A car which leaves the track in three (3) consecutive races is disqualified. EXCEPTION: When a car is caused to leave the track because of a collision with another car or as the result of a track fault.
2. Scouts shall be responsible for presenting their own car at the Start Line staging area and returning it to the Pit Area after each race heat. Scouts are only allowed to handle their own car and should not touch or handle and other car(s). Parents are not to handle or make adjustments to the car during the races.

**RULE CLARIFICATIONS**

INSPECTION: Each car must pass an inspection by Race Officials before it may compete. The inspectors have the right to disqualify any cars which do not meet the rules and specifications outlined previously in this document, If a car does not pass inspection, the owner (Cub Scout) will be informed of the reason for failure and will be given a time within the official registration period to make adjustments. The inspection tools used by the Race Committee are official and final; no other measurement devices will be considered. This ensures that every car is inspected to the same standards. If the Official Inspection Scale reads 5.01 oz, then the car is overweight and will not pass inspection. If the wheel gauge slips over the wheel easily, then the wheel/car will not pass inspection. The wheel gauge is sized one-thousandth of an inch smaller than the printed measurement; so if, for example, a wheel measures exactly 1.170”, it will not fit into the 1.170 OD gauge and will pass inspection (because it complies with the minimum OD specifications). If the car does not fit correctly into the inspection box, it will not pass inspection due to size specifications. All efforts to assure the accuracy of the inspection tools are taken prior to the race and shall not come into question.

EXTENDED WHEELBASE/CAR BODY: The axle grooves provided in the block of wood can be, but do not have to be used. There are several problems with restricting the builder to just slot positions. Wheel camber is not guaranteed to be horizontal, and the slot separation can vary up to ½” in different kits. The wheelbase may be extended, but the wheels are not to extend past the front or rear of the car body. Depending upon the track, the front of the car may rest against a short starting pin; it is, therefore, recommended that the front of the car which rests on the pin is no higher than ¼” above the axle line. A flat nose is required for fair starting and finish line sensing.

LUBRICANT: Dry powdered graphite and/or oils may be used, but you are not required to use any lubricant. Both lubricants perform similarly in friction reduction. A myth from past Pinewood Derby racing is that oils can damage the polystyrene wheels. In actuality, only aromatic liquid compounds (usually containing “ene” in the name such as benzene, toluene, xylene, naphthalene, etc.) show damage to polystyrene. Nevertheless, the stigma exists, causing some local race officials to outlaw the use of all oils. Non-aromatic oils are much easier to use and less messy than graphite and molybdenum dry lubricants. There is no uniform way to detect a thin film of oil on inspection; therefore unable to be universally prohibited.

WEIGHT: The maximum allowable weight is 5.0 oz. The scale used the day of the race and weight recorded will be considered “OFFICIAL.” Even though a car may have weighed at or under 5 oz. using the same scale at a previous race, the official weight is that measured on the current race day. Once a car reaches its final official weight, it will be impounded and no other adjustments may be made. If a car is overweight, you will be allowed a limited number of opportunities, as determined by the Race Committee, within the registration timeframe to remove excess weight and re-weigh the car.

WHEELS/AXLES: All wheels must have the raised BSA-PINEWOOD DERBY letters on the outside surface of the wheel. The wheel surface contact area may not be rounded, beveled, or shaved (See illustrations). The wheel itself may be made round by sanding, lathing, filing, etc. so that it rolls in a more uniform manner. The BSA wheels will be inspected if necessary with a metal template to ensure they are not in violation of these specifications.

GENERAL: Each year the Cub Scout must construct a new car; cars from previous years are not permitted to be used. The Cub Scout should play an active role in the design and construction of the car. It is understandable that a younger Scout will need more assistance from an adult and we encourage this along with explanations for the reason the wood is sanded, axles are polished, etc. It is also understood that Cub Scouts will need assistance with the use of power and/or hand tools.

RULES: Any participant (including parents of the participant) may appeal to the Race Committee for interpretation or clarification of the rules. The Race Committee Chairman shall be the final judge of these rules. Unsportsmanlike conduct by a participant, spectator, or volunteer staff member will be grounds for expulsion from the competition and/or the race area.

**These rules, as with any rules, cannot be all encompassing and must be tempered in certain circumstances. In all incidences, fair play will prevail in order to allow the Cub Scout the opportunity to race his or her car, have fun, and learn good sportsmanship. Any changes in the rules will be toward this goal and may be modified at any time.**

**ALL DECISIONS MADE BY THE RACE OFFICIALS ARE FINAL**