

Cub Scout Pack 320 – Pinewood Derby Rules

1. Car Construction

- 1.1. **Materials:** All cars entered by a Scout in a Scout category shall be constructed from the "Official Grand Prix Pinewood Derby Kit" (referred to below as the kit) or separately purchased official 'BSA' replacement parts. Kits may be purchased from the Scout Service Center in Apopka or may be purchased elsewhere if they are of the exact type manufactured by the BSA as specified above.



- 1.2. **Purchased Materials:** To remain consistent with Central Florida Council Pinewood Derby rules, we will permit use of purchased materials that have been prepped according to the rules. While ideally each child will fully participate in preparing all the vehicle components, we do recognize that not every family has the tools/expertise to employ all the



optimization techniques (also, we recognize that inspectors can identify illegal modifications, but can't possibly determine who performed a legal modification). Also, for style reasons, there are official 'BSA' wheels that are sold in a variety of colors that may better match your car's paint scheme. These wheels offer no performance advantage, so by all means purchase and use these if you desire.

- 1.3. **New Work:** Construction of ALL entries MUST have begun during the current scouting year – after June 1st of the prior calendar year. (i.e. You may not re-enter cars built in previous years)

- 1.4. **Weight:** Race cars may weigh no more than five (5) ounces (total weight) as determined on the official scale during the pre-race inspection and registration process. Postal scales provide good estimates if you are unsure of the weight of your car. The official weight will

Cub Scout Pack 320 – Pinewood Derby Rules

be measured to a precision of 0.1 oz., so parents can practically obtain a scale to ensure compliance during construction.

1.5. *Weights and Attachment:* Weight may be added to the car and will be considered part of the car for purposes of all measurements. "Weight" is considered to be any material on the car that is not provided in the kit. All weight must be securely fastened to the car, e.g., by permanent glue, nails or screws, but not by "sticky substances", e.g., tape, or tack spray. Weights shall be passive, i.e., non-moveable, non-magnetic, non-electric, non-sticky, etc. For example, no loose material of any kind, such as lead shot, may be used.

1.6. *Gravity Powered:* The race car may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car. (For instance, this provision disqualifies cars with sticky substances on the front of the car and protrusions which may catch on the starting pin.)

1.7. *Size:* Race cars may be no longer than 7 inches, nor wider than 2-3/4 (2.75) inches, as determined by the official gages during the Registration and Inspection. Underside clearance of at least 3/8 (0.375) inches and inside wheel to wheel clearance of at least 1-3/4 (1.75) inches is required to ensure clearance over the lane guide so that the car will run on the race track. Adequate clearance is the responsibility of the race participant. If the vehicle does not fit onto the lane guides, it will not be allowed to race. We will not risk the possibility that an improperly constructed vehicle will derail and damage another child's entry.

1.8. *Wheels and Axles:* The car shall roll on official BSA wheels. The wheels shall turn about the axle nails from the kit. The axle nails shall be firmly affixed to the wood of the car body, and MUST be placed in the original "axle grooves" in the supplied wooden block. It must be obvious to the judges that the car is using the grooves, wheels, and the nails from the kit. Axles may be smoothed and polished to remove imperfections, but significant removal of weight or 'grooving' of axles to minimize tire contact is prohibited.



Figure 1- Legal Axles



Figure 2- Illegal 'Speed' Axles

1.9. *Wheel Positioning:*

Adjusting the camber or cant of the wheels to approximate 'razor wheels' by reducing the

Cub Scout Pack 320 – Pinewood Derby Rules

contact patch to one edge of the wheel is expressly prohibited by these rules.

- 1.10. **Wheel Treatment:** Wheel treatment (hub and tread smoothing and polishing) may not result in substantial removal of mass or in reducing the wheel width from the original kit wheels. Some of the original "tread marks" on the wheel face must remain intact, i.e., apparent to the inspector. Wheels may not be machined to a beveled condition and the portion of the wheel surface that contacts the track must remain parallel to the axle. Wheel bearings, washers, inserts, sleeves or bushings are prohibited.

- 1.11. **Car Design Rules Interpretation:** Interpretation of the inspection and registration rules are at the sole discretion of the Inspection Committee Judges present during the Inspection and Registration process. Pack 320 rules have been designed to be consistent with the Central Florida Council's Pinewood Derby rules so that cars may participate in both events without modification. In the event that the Pack rules stated here are unclear, track officials have the option of referring to the Council rules for clarification

Cub Scout Pack 320 – Pinewood Derby Rules

2. *Race Day*

2.1. **Single Entry per Person:** Only one car may be registered by any person in the Pinewood Derby.

2.2. **Competitor Categories:** Each Cub Scout rank will compete for speed in separate categories. The fastest cars will be decided based on best cumulative time. Siblings age 16 or under will compete in the “Sibling category.”

2.3. **Inspection Gages:** The race-day Inspection and Registration area will have the official scale and size measurement tools. That Inspection and Registration equipment will be the official equipment for the race. All participants are responsible for ensuring that their car meets all specifications as established by this equipment. They should be prepared to make adjustments to their cars if necessary.

2.4. **Race Day Lubrication:** There will be a lubrication table set up at the race. Only dry lubricants such as graphite or powdered teflon "white lube" will be allowed for lubricating the wheels. Lubricants may not foul the track. In the interest of fairness, no participant will be permitted to lubricate their car after the car has been registered.



2.5. **Late Inspection and Registration:** If a Scout fails to register their car by the scheduled deadline, they may not race their car. There is no practical/fair means of incorporating late entries into the race schedule once racing has begun.

2.6. **Impound:** No car may be altered in any way after it has been registered. After a car passes registration, it will be impounded by the Pinewood Derby Committee. ONCE YOU SUBMIT YOUR CAR FOR INSPECTION AND REGISTRATION YOU MAY NOT TOUCH YOUR CAR FOR ANY REASON WITHOUT THE EXPLICIT PERMISSION OF THE PINWOOD DERBY INSPECTION COMMITTEE JUDGES until after the race is completed.

Cub Scout Pack 320 – Pinewood Derby Rules

- 2.7. **Race Area:** Only race officials may enter the track area. This rule will be strictly enforced.
- 2.8. **Race-Day Rules Interpretation:** On Race-Day, the participant must direct all questions of rules interpretations and procedures to the Pinewood Derby Chairman or Race Officials promptly. Decisions of Race Officials on questions of rules interpretations and procedure may be appealed to the Pinewood Derby Chairman. All decisions of the Pinewood Derby Chairman are final. Decisions of Race Officials on questions of fact (*i.e.*, the result of a specific race) may not be appealed beyond the Trackmaster and/or Finish Line Judges. Note: Unsportsmanlike conduct by any participant or spectator will be grounds for expulsion from the competition and/or the race area.

Cub Scout Pack 320 – Pinewood Derby Rules

3. Racing

- 3.1. **Scheduling Methodology:** Vehicles within each competitor category will be matched up against opponents within that same category. The race schedule will be computer-generated using a dynamic scheduling methodology. The objective of this methodology is to maximize the number of heat winners by attempting to evenly match competitors in subsequent rounds. Heat winners will likely face other heat winners. This methodology should maximize the number of heat winners, and produce close, exciting finishes.
- 3.2. **Lane Assignment:** Each vehicle will race four times. While the race software will aim to place vehicles in different lanes, the chosen methodology does not guarantee that every vehicle will race exactly once in each of the four lanes, due to conflicts that may arise when assigning heat matchups.
- 3.3. **Starting Mechanism:** The "starting line" shall consist of vertical pins of approximately 1/4 inch diameter, extending approximately 1 inch above the track surface and approximately centered in the each lane. No part of the vehicle may extend past this pin prior to the start. The vehicle may be required to run backward if necessary to ensure a legal start.
- 3.4. **'Derailment' (Car Leaves Lane) :** If, during a race heat, a car leaves its lane but proceeds down the track in a manner that does not interfere with any other car, then the race will be called normally. If the car leaves it's lane and interferes with another car, the race will be re-staged and re-run. If the same car again leaves it's lane and interferes with another car, that car will be judged last place, and the race will be re-staged and re-run without that car.
- 3.5. **Track Fault:** If a car leaves its lane, at his sole discretion, the Trackmaster may inspect the track and, if a track fault was the likely cause of the initial violation, the Trackmaster may order the race heat to be rerun after the track is repaired. If the Trackmaster determines that a vehicle design flaw is causing repeated 'derailments', that vehicle will be removed from the event to ensure that other cars are not placed at risk.
- 3.6. **Car Repair :** If, during the race, a wheel falls off or the car becomes otherwise damaged, then the participant may, to the best of his ability, perform repairs with the assistance of his adult partner. If a car is damaged due to track fault, or damage caused by another car or person, then an Inspection Committee Judge, at his or her sole discretion, may allow additional repair assistance to the Cub.

Cub Scout Pack 320 – Pinewood Derby Rules

4. Scoring & Awards

- 4.1. **Electronic Timing:** If the Trackmaster deems there to have been a discrepancy with the electronic timing for any heat, that heat shall be re-run.
- 4.2. **Scoring:** Speed Standings will be based upon the best (lowest) cumulative times across all four heats.
- 4.3. **Speed Awards:** Within each of the following competitor categories, the top three finishers will be awarded a medal
- **Sibling**
 - **Tiger**
 - **Wolf**
 - **Bear**
 - **Webelos**
 - **In addition, the three fastest Scout entries overall will be awarded trophies.**
- 4.4. **Additional Awards:** In addition to the speed awards, Pack leadership (Cubmaster, Den Leaders, and the Pinewood Derby Chair) will review the Cub Scout entries (siblings excluded) for the following additional award categories:
- **Best Bodywork:** The most superior transformation of the block of wood into an attractive vehicle. Styling elements such as paint or additional details should not be considered.
 - **Best Paint/Color:** The most superior application of paint/color to the vehicle. Judges may consider the aesthetic appeal of the color combination, the smoothness / lack of imperfections, and the finer details such as painted on windows, pinstriping, numbers, etc. (not including decals)
 - **Best Detail:** The best use of details added on to the vehicle to enhance it's design. Paint and bodywork should not be considered (as these have their own award categories).
 - **Most Creative:** The most inspired, imaginative 'concept' for a vehicle. "It's the thought that counts." Might not be the most skillfully-constructed entry, but should be a somewhat unique, entertaining design idea.
 - **Down and Derby Award:** The true spirit of the Pinewood Derby is that the boys design and build their vehicles. The movie "Down and Derby" presented a scenario where parents took over the car construction at the expense of the boys' enjoyment and learning. The Down and Derby Award will be presented to that vehicle that best embodies the spirit of a Scout-built car.

