

**Heritage Trails**  
**PINEWOOD DEMOLITION DERBY**  
**RULES – 2023**

**What is a Pinewood Demolition Derby?**

If you go to a lot of Pinewood Derby's, you'll notice that after the Derby has ended and everyone has taken their cars back, an interesting thing happens among the Cubs as they wait around for their parents to "clean-up" from the event. It usually starts with one innocent cub sliding his car across the open floor space, followed by another, and yet another. Within a few minutes, several cars are skittering quickly across the floor at the same time and then... BANG!,,, it happens! A single collision takes place. There are a couple seconds of silence as the "racers" process what just happened. Then, as if all the Scouts simultaneously read each other's minds, an event of massive carnage unfolds in the blink of an eye! Cars skitter everywhere and collide with walls, chairs, and each other! Akela's explode with shouting, as they watch weeks of hard work physically disintegrate in front of their eyes! Within a few seconds, the event has ended and one car remains intact within a pile of rubble. The "racers" smile, and look at each other with an air of satisfaction. Regardless of the consequences, the "racers" have completed their mission. They have taken what was their father's event and made it into their own.

Thus was the beginning of the Pinewood Demolition Derby. This event is now much more refined from the primal carnage described above, but the high-impact action and crashing satisfaction is still there. Imagine if you will a U-shaped track, 32 feet in length, no center guiderails, and barely enough width for two cars to pass side by side. A single car is placed at either end of the track and they are released simultaneously. The cars barrel down the track, speeding directly at each other, destined for a head-on collision! The results? A spectacular crash at the center of the track, with usually one car being thrown from the track (the loser) and the other car remaining on the track (the winner). Scores are tallied, eliminations are processed, and the next pair of cars repeat the process.

**General Rules & Regulations**

The Pinewood Demolition Derby is open all Scouts, siblings, or parents. Cars built for previous Pinewood Derby's and Pinewood Demolition Derby's may be entered in this event. Each car must pass inspection by the official Derby Inspectors before it is allowed to compete. The Derby Inspectors have the right to disqualify any car that does not meet the specifications stated in this document. If a car does not pass at inspection, the owner will be informed of the observed problems and will be given until the end of the official registration period to correct the problem. If the car fails inspection, the owner must fix it and wait in line for another inspection. After inspection, all cars will be impounded until the start of the derby. Once it is impounded, it cannot be handled again by racers until the derby has ended (no exceptions). Only one car may be registered per person in the Pinewood Demolition Derby, and that person must be present at the time of inspection. A car currently impounded in another event before the start of the Demolition Derby cannot participate in this event. We recommend building a separate car specifically designed for this event, as this usually gives you the best chance of survival.

All entries are run against each other without regard to divisional classification. The Demolition Derby entries will be run two-at-a-time for the purpose of determining the winner of each challenge pair or heat. During and after each run, cars may not be touched or removed from the track until they have finished moving completely and have come to a full rest. The Demolition Derby Track is designed to be just wide enough so that, in some cases, cars can

narrowly pass by each other and then collide in reverse as they come back down off the slope pairs. An entry must survive a challenge run in a rolling condition sufficient to make it to the impact zone on a subsequent run in order to be considered in race-worthy rolling condition and to participate in further challenges or heats.

Scoring will be done using a Triple Elimination system (sometimes referred to as “three strikes, you’re out”). Elimination will occur once a car has sustained three losses, OR is disabled. Due to odd numbers of racers, there will be times when a car does not run in a round because there is no opponent available for it to run against. This is known as a “BYE” and the car is automatically advanced to the next round of competition. Selection of challenge pairs will be done at random; however, there may be times when officials base the pairings on the visual amount of damage that a car has sustained, within each group of cars that has equal number of losses. This will be done as best as possible by the Demolition Derby Inspectors and their decisions shall be final. Heat winners will be determined using the following methods:

1. If one car is disabled (no longer in a “race worthy” rolling condition) and unable to run again, it loses that heat and is eliminated from further competition.
2. If both cars in a given heat are disabled, both are eliminated from further competition.
3. If both cars survive a heat in “race worthy” rolling condition, the car that comes to rest with at least one wheel in contact with the track (not counting wheels that are separated from the car), shall be declared the winner of that heat.
4. If both cars survive a heat in “race worthy” rolling condition, and BOTH cars come to rest with at least one wheel in contact with the track, the car that came to rest closest to the marked mid-point of the track shall be declared the winner of that heat.
5. If both cars survive a heat in “race-worthy” rolling condition, and BOTH cars are knocked completely off the track (neither car comes to rest with a wheel in contact with the track), the car that came to rest closest to the marked mid-point of the track shall be declared the winner of that heat.
6. If both cars survive a heat in “race-worthy” rolling condition, and one car is upside down on the track (no wheels in contact with the track) while the other car is knocked completely off the track, the car that is upside down on the track shall be declared the winner (even if it is furthest from the center of the track).

First, second, and third-place awards will be given to the final three survivors.

### **Specifications and Inspection Points**

The official Derby Inspector’s scale is considered final. No means may be employed that would alter the weight after check-in. Bring your car with the ability to adjust the weight if desired. Drills to remove weight are also handy.

The Derby Inspectors reserves the right to allow minor variances to the inspection points as long as no advantages are perceived.

The Chairperson/Lead Inspector will have the final say on whether a car qualifies. This person's name shall be posted prior to the race at the inspection table and must remain on location during the duration of the races.

### **Length, Width, and Clearance**

1. The maximum length of the base wood block shall not exceed 7 inches. Protrusions from the block may not allow the car to exceed a maximum length of 9 inches. Protrusions from the block may not interfere with the starting pin, but they may extend past the starting pin if desired. The base wood block must rest against the starting pin.
2. Maximum width (including wheels) shall not exceed 3 inches. Protrusions from the block may not extend the width of the car past 3 inches. Three inches is the overall width, period.
3. The car should have a minimum of 1.75 inches of clearance between the inside edges of the wheels across the width of the car. This width straddles the staging area's center guide rail behind the starting pins at either end of the track. This is the only area on the track that has a center guide rail and is necessary to ensure that the car's wheels do not interfere with the starting pin's drop hole.
4. The minimum clearance between the bottom of the car and the track surface should be above 1/4 inch. This clearance is mostly necessary to ensure that the car can straddle the 1.5-inch wide rail used at the starting gates. This clearance only applies to the area directly under the car that is the width of the block and does not apply to the half-inch area on either side of the block, in front, between, and behind the wheels. Note that the rails are necessary at the starting gates on the track to ensure that the car wheels do not accidentally interfere with the starting pins drop hole.
5. Note that rules 3 & 4 use the word "SHOULD". It is NOT necessary to follow these two rules, BUT if your car gets hung up on the guide rail when the starting pin drops and doesn't go down the track due to rules 3 & 4 not being followed, it shall be considered to be in a "Non-Race Worthy Condition" as it cannot reach the center of the track. Cars that are in a "Non-Race Worthy Condition" are considered DISABLED and immediately eliminated from any further competition (see scoring method #1 under "General Rules and Regulations"). We recommend you follow rules 3 & 4 to ensure your car continues to remain in a race-worthy condition during every heat.

### **Weight, Design, and Appearance**

6. The maximum allowable weight is 5 ounces, using the official Demolition Derby Inspector's scale. There will be only one scale used for this official registration.
7. Details such as steering wheel, driver, spoiler, decals, painting, and such, are permissible as long as these details do not violate any other rules in this document (especially rules 1 through 5). All details must be securely fastened to the car and must not be movable.
8. The car must be free-wheeling with no starting devices, and the car body may have no moving parts. Cars can only be powered by gravity alone. Working engines, propellers, or motors are prohibited. Non-working engines, propellers, or motors are permissible as details (see rule #7).
9. The car must be built in whole or part by the entrant. Finished cars made by someone else are prohibited.
10. No obscene drawings or profanity is allowed on the car. Cars having decorations with themes unsuitable for children will be banned entirely.

### **Wheels and Axles**

11. Wheels and Axles must be Official Pinewood Derby BSA Wheels and Official Pinewood Derby BSA Axles (either from the official box kit or from the wheels/axles sets).
12. Axles may be physically altered, but no material (other than lubricant) may be added.
13. Wheels may be physically altered, but no material (other than lubricant) may be added.

14. Axle placement may be altered but must be placed on the base wood block. Front and rear axle locations can be moved to any desired location on the base wood block. You don't have to use the pre-cut slots for axle placement.
15. The car must have at least four (4) wheels and four (4) axles attached to the base wood block.
16. Wheel bearings, washers, stickers, hubcaps, and bushings are prohibited on the wheels and axles. **Note:** Washers and steel balls can be used elsewhere on the vehicle for weighting purposes. They cannot be used in any manner that might enhance the performance of the wheels.
17. The car shall not ride on or use any spring (or similar device such as soft plastics).
18. Only non-liquid wheel lubrication is permissible for use on your Pinewood Derby Car. Graphite is acceptable. Once a car has been inspected and impounded, no further lubrication can be added to the car for the remainder of the District Race.

### **Hints & Tips:**

In past years, all car designs can be classified into two categories. The first is the "Blunt Force Trauma" category, which consists of cars that have a flat front end that can be used for ramming purposes. The second is the "Sloped Ramping" category and consists of cars that have a sloped front end that can possibly get underneath the opponent's car, causing it to ramp or flip. It was discovered that the "Blunt Force Trauma" category seems to reign supreme over the "Sloped Ramping" category, as each year, all three trophies were won by cars in this category.

Also, keep in mind to design protection for your wheels. A loss of three or more wheels will disable your car and eliminate it from the competition. A front-end collision directly to a wheel has enough force to rip the wheel off of the axle and leave the axle still in the wood of the car (this actually happened). A little protection in front of your wheels can go a long way in this competition. Also, narrowing your wheels (but still keeping them close to the car) will increase your chances of avoiding a head-on collision and allow your car to collide in reverse more often with its opponent.

Finally, remember that pinewood is porous. This wood can be hardened by soaking up sealers, paint, or glues that penetrate into the wood. Your car will be less likely to crack or split the wood if it is first treated in this manner.