Heritage Trails District Derby Day
EINSTEIN DERBY
RULES – 2020

This year's Einstein Derby will be held on Saturday, March 28th, 2020. The race runs from 1:30 pm to 2:00 pm and is being held at the St. Paul's United Methodist Church at 45 First Avenue Red Lion, PA. Inspections for the Einstein Derby will be open from 10:00 am to 1:00 pm. Registration fees for the Einstein Derby are $5.00 (see separate registration form to register). The registration fees cover the cost of the trophies for 1st, 2nd, and 3rd place in this event.

Food, snacks and drinks will be sold at a minimum cost. Proceeds gained from these sales will be used to help cover the costs of the District Derby. The host Pack for this year's Derby Day is Pack 28, Red Lion, PA.

What is an Einstein Derby?

An Einstein Derby is a Pinewood Derby race where the slowest car to cross the finish line is declared the winner. Sometimes this type of race is referred to as a “turtle race”, but we feel that this term doesn’t really emphasize the true amount of engineering and thought process that goes into making these cars. Making a car go fast is easy, compared to making one go just slow enough to cross the finish line. Try it and you’ll see what I mean!

A nice advantage to making a car for the Einstein Derby is that you might have already created one at your Pack level. If your car at the Pack level came in last place, there is a good chance that you may have a car that is perfectly designed for this type of race. Give yourself another opportunity to show everyone your true genius, because we think highly of people who can make a slow car!

General Rules & Regulations

The Einstein Derby is open to any scout, sibling, or parent in the Heritage Trails District. Cars built for previous Pinewood Derby's and other Einstein Derby's may be entered in this event. Each car must pass inspection by the official Derby Inspectors before it will be allowed to compete. The Derby Inspectors have the right to disqualify any car that does not meet the specifications stated in this document. If at inspection a car does not pass, the owner will be informed of the observed problems and will be given until the end of the official registration period in which to correct the problem. If the car fails inspection the owner must fix it and then 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 Einstein Derby and that person must be present at the time of inspection. A car that is currently impounded in another event prior to the start of the Einstein Derby cannot participate in this event. We recommend building a separate car specifically designed for this event, as this usually gives you the best results. The Derby Inspectors reserves the right to allow minor variances to the inspection points, as long as no advantages are perceived.

Scoring will be done using a Triple Elimination system (sometimes referred to as “three strikes you’re out”). Cars will be chosen in a random order and will have random lane assignments. A car that loses a heat will be marked as having a “loss”. When a car gets three “losses” it will be eliminated from the competition. Top cars may have to do single “victory runs” in order to keep wear on the wheels and axles equal with other cars still competing for elimination. If a car does not finish a victory run, it will not receive a loss. The order of finish, as determined by the track sensors, will be documented by Einstein Derby officials. If a sensor failed to trigger, the Track chairman may direct that particular heat be rerun.
If a car comes off the guide rail and interferes with another racer’s car the heat will be run again. If a car leaves the track without interfering with an opponent, it shall be considered to have ended its heat at that point and will receive a loss (provided it is not a victory run). If a car leaves its lane in three runs during the derby then it shall be disqualified. If cars are leaving the track, the track chairman may decide to inspect the track at his discretion. If a track fault is found which probably caused the problem, the track chairman may order the track to be repaired and the race heat to be rerun. If the car becomes obviously damaged for any reason, repairs will be allowed within a time limit chosen by the track chairman. If the damage occurred during the running of a heat, the re-running of that heat will be up to the discretion of the track chairman. If, during a race heat, no car reaches the finish line on the track, all cars in the heat shall receive one loss. After each race heat the cars will be returned to the pit area. If any other condition seems to create a problem with the race and its outcome, it may be run again at the sole discretion of the track chairman. Good sportsmanship is expected from everyone involved.

**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.

**Length, Width, and Clearance**

1. Maximum length of the wood block shall not exceed 7 inches.
2. Maximum width (including wheels) shall not exceed 3 inches.
3. Maximum height of the car shall not exceed 4 inches. This is to make sure that the car can pass beneath the electronic judge at the end of the track.
4. The minimum clearance between the bottom of the car and the track surface should be 3/8 inch so that the car will clear the center guide strip on the track (especially when transitioning through the curved section of the track.)
5. The car should have a minimum of 1.75 inches clearance between the inside edges of the wheels across the width of the car. This width straddles the track lane’s center guide rail with some room on either side, but not so much that the cars will bump each other if they are at or below the right width.

**Weight, Design, and Appearance**

6. Maximum allowable weight is 5 ounces, using the official Einstein Derby Inspector’s scale. There will be the 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 6). 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. Car 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 only be filed and sanded to remove burrs. Axles may also be polished and the nail head may be tapered, if desired.
13. Wheels may only be modified with light sanding to overcome mold flashing, shape irregularities, and to smooth the edges, if desired. The wheel diameter must not be less than 1.80 inches and the wheel width must not be less than 0.360 inches, on a digital caliper.

14. Axle placement may be altered. Front and rear axle locations can be moved. You don’t have to use the precut slots for axle placement, if desired.

15. The car must have four (4) wheels and four (4) axles attached to it.

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 reduce the performance of the wheels.

17. The car shall not ride on or use any type of spring (or similar device such as soft plastics).

18. Only non-liquid wheel lubricant is allowed. 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 derby.

Questions

If you have any questions pertaining to registration, volunteering or the rules within this document, please email the District Executive, Michael Adelberg (Michael.Adelberg@scounting.org) for clarification.