

St. Brendan's Cub Scout Pack 859

Official Pinewood Derby Rules

1. Pinewood Derby Car

- A. Only the official Pinewood Derby kit shall be used.
- B. The completed car shall have the **kit** wheels and axles. Other wheels and axles may not be used.
- C. The axles must be mounted in the slots provided in the kit. They may not be moved forward or backward on the car body.
- D. The kit shall be **primarily designed and built by the Cub Scout** with the supervision and guidance of an adult. This event is meant to be a learning experience for the scouts. Hands on experience will teach them the most. **REMEMBER TO START BUILDING THE CAR EARLY. THE SCOUTS WILL NOT BE ABLE TO BUILD AS FAST AS ADULTS.**

2. Weight

- A. The finished car weight shall not exceed 5 ounces.
- B. Weights must be firmly attached.
- C. Any solid material may be used for weights (no liquid mercury).

3. Width

- A. Overall width shall not exceed two and three-quarters inches ($2\frac{3}{4}$ ")

4. Length

- A. Overall length shall not exceed seven inches (7")

5. Bottom Clearance

- A. The car shall maintain a three-eighth inch ($3/8$ ") clearance on the bottom.

6. Wheels

- A. Wheel surface may be sanded slightly.
- B. Wheels may not be "balanced" with weights.
- C. Wheels may not be "cambered" in/out or "staggered" front/back, but shall be installed level and in alignment (i.e. all four wheels shall touch the track within reason).
- D. The axles (nails) shall be located in the slots provided in the original kit.

7. Lubricants

- A. Washers, bearings, and bushings on wheels are prohibited.
- B. Any lubricant is permitted.

8. Car Parts

- A. No loose materials of any kind are permitted on the car.
- B. No springs or rubber shocks.
- C. The axles (nails) shall be firmly attached to the car.

9. Car Coverings

- A. Template kits, decal kits, weight kits and plans from books and magazines may be used.
- B. Details and decals from other hobby kits may be used but shall be firmly attached.
- C. The car may be painted as desired.

10. Official Inspection Committee

- A. The determination of the official technical inspection committee as to the race-worthiness of the cars shall be final.
- B. The official Pinewood Derby scale shall determine the five-ounce (5-oz.) weight limit.
- C. Opportunity will be given and equipment provided to adjust the car to pass technical inspection up until technical inspection closes.
- D. The purpose of the technical committee is to get all the cars possible to run and not to disqualify cars.
- E. Once a car passes technical inspection it will be placed within the impound area and will not be returned to the scout until after the races.
- F. No additional modifications may be made to the car after it is weighed and inspected.
- G. The participant may not handle the car until the actual race begins.

11. Finish Line

- A. The determination of the finish line judges shall be final.
- B. In the event of an extremely close finish (as determined by the judges), the judges may call for a "tie breaker runoff".

12. Most Important Rules

- A. The most important rules are FAIR and FUN.
- B. The overall purpose of the Pinewood Derby is:
 - a. to build a car to the best of your ability.
 - b. to enjoy seeing your car run down the track to the best of its ability.
 - c. to cheer on the best cars in your pack to victory.
 - d. to have fun.

Top Secret Information for Cub Scouts Only

Hints from the desk of the Racemaster

These are suggestions and ideas and are not requirements or rules

1. The most important factor in building a successful car is the wheel axle connection.
 - A. The axles (nails) should be firmly attached to the wood block.
 - B. A little wood glue or epoxy will make the axle more secure.
 - C. Each wheel surface should be sanded lightly to remove burrs.
 - D. There should be very little play (wiggle) between the car body and wheels, but not too tight or the wheels will bind and not turn freely.
 - E. The front and back wheels should be in a straight line. Test by sighting along a ruler placed against the side of the wheels.
 - F. The wheels should all be level so the car does not rock back and forth at opposite corners.
 - G. A small amount of dry graphite powder lubricant at each wheel/axle will help reduce friction (too much will slow the car).
 - H. Graphite will be available at the technical inspection. (You do not need to buy any now.)

2. The weight location will affect the running of the car. Remember that your car's total finished weight cannot exceed five ounces (5 oz.) Be aware that post office scales are not as accurate as the official Pine Wood Derby scale.
 - A. Weights can be anything providing they are solid.
 - B. Metal washers attached to the body of the car with wood screws work well and can be easily adjusted to meet technical weigh-in.
 - C. Weights should be placed to create a well-balanced car.
 - D. Placement should be low and in the area between the front and back wheels.
 - E. Note: placing the weights to the back of the car behind the rear wheels may cause the front wheels to lift off the track.
 - F. Some winning cars have been made by placing the weights higher and to the back half of the car.
 - G. In theory, the weights give the car more speed, however, the car may be unstable resulting in the car bouncing and rattling down the track. Experience should be your guide. Talk with other scouts and share ideas.
 - H. To check the overall balance of your car, try balancing your car in the middle on a pencil or wood dowel (like a plank on a teeter-totter).

3. Paint and body style/design do not greatly affect the car's speed. A plain block of unpainted wood with good wheels and the proper weight location can win.
 - A. In the kit instruction paper (enclosed with your kit), building instruction five (#5) mentions using sanding sealer. This is not required but can be used if desired. Sanding sealer can be purchased at the local hardware or hobby store or may be homemade.
 - B. Homemade sanding sealer:
 - a. Mix one part Elmer's glue with one part warm water.
 - b. Brush on the car (not too thick) and let dry overnight.
 - C. Sanding sealer will fill the pores in the wood to make the car easier to paint.
 - a. Lightly sand the car with number six hundred (#600) wet/dry sandpaper or fine steel wool.
 - b. Wipe the car clean.
 - c. Brush on the paint (spray paint is acceptable).
 - D. Decals from other models and stick-ons may be used.

- E. Parts from other models (like windshields or exhaust tailpipes) may be used providing they are securely attached and are within the size limitations of the car. Remember that your car can not exceed five ounces (5 oz.).
4. Stuck for Ideas? Try some of these:
- A. Indy car
 - B. Stock car
 - C. Rocket
 - D. Space shuttle
 - E. Dragster
 - F. Fire truck
 - G. Garbage truck
 - H. Pop can
 - I. Catsup bottle
 - J. Tennis shoe
 - K. Pinecone
 - L. Cereal box
 - M. Oscar Meyer Weinermobile
 - N. Monster truck
 - O. Crash test dummies car
 - P. Batmobile
 - Q. Roadster
 - R. Canoe
 - S. Bathtub
 - T. Ghostbusters car
 - U. Arrow
 - V. Birdhouse on wheels
 - W. Cardboard or balsa wood strips could be glued to the basic wood block and painted to make some of the above cars.
 - X. Have a few backup ideas to try if your first idea turns out to be too difficult.
 - Y. Talk over your ideas with an adult for some ideas about how to begin.

Happy Racing and Good Luck!