

How to Make a Fast Pinewood Derby Car



Introduction

- Work with your child
 - Let the child design the car – KEEP IT SIMPLE.
 - Involve the child in cutting the car
 - Let him sand, prime, paint and seal
- 5 oz, length 7" or less from front to back



Basics

- Sleek Shape
- Maximum Weight
- Smooth, Round
Wheels
- Polished Axles
- Dry Lubrication
- Straight Running



The Basics

- Maximize the weight. Car, including wheels should be 5.0 oz. **DO NOT EXCEED!**
- Minimize the resistance
 - Air
 - Wheel to Nail
 - Number of Wheels



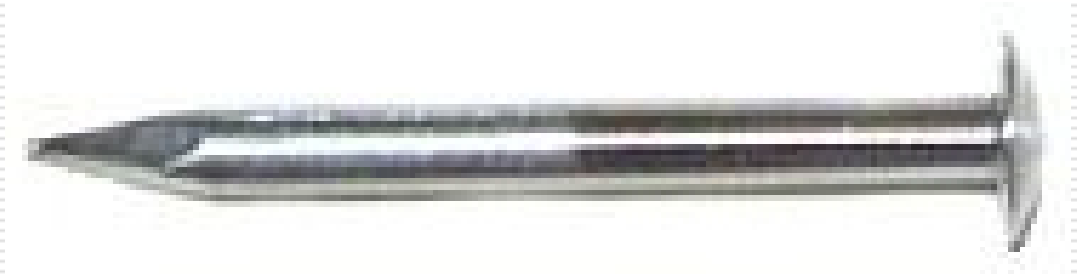
Design – sleek, “aerodynamic”

- ❑ Wedge shape
- ❑ Limit decorative items which may slow down the car
- ❑ Cut with scroll saw or coping hand saw
– **SUPERVISION AND SAFETY!!!**



Nails

- ❑ Not always straight
- ❑ Has Burr
- ❑ Needs to be polished



How to Polish Nail

- ❑ Eye and hand protection!!!
- ❑ Drill
- ❑ File – file off burr
- ❑ Sandpaper – 400 grit, 600 grit, polishing compound



Wheels

- Remove bump
 - **light** sanding



Painting

- ❑ Sand with 60, 220, 400 grit sandpaper
- ❑ Wood needs to be primed!!!
- ❑ Paint can either be spray or enamel hand paint
- ❑ Seal with acrylic sealer



Design Awards



Construction Rules on the Web

- ❑ **New Cars:** All cars must have been made during the current year. No past years' cars or parts from those cars.
- ❑ **Length and Width:** Width shall not exceed 2 3/4 inches. The length of the car shall not exceed 7 inches. This is the size of the block in the box.
- ❑ **Weight and Appearance:** Weight shall not exceed 5 ounces. The readings of the Official Race Scale will be considered final.
- ❑ Added details such as steering wheel, driver, spoiler, decals, painting, and interior designs are permissible and encouraged. However, they must be securely fastened. No loose materials (such as lead shot) are allowed.
- ❑ Cars with wet paint or glue will not be accepted.
- ❑ **Wheels and Axles:** Only the BSA wheels and axles can be used. The wheels must have official Boy Scout logo on them to be approved. No solid bar axles. Axles may be polished. Wheels may be sanded to remove mold projections on the treads, however, the wheels must resemble their original shape when finished, i.e. the treads are flat. No rounded, ridged, beveled or cut-down wheels are allowed.
- ❑ The car shall not ride on a spring. Axles should be in contact with wood body, e.g., not in a steel sleeve.
- ❑ **Lubrication:** Only Dry Powdered Lubricants, such as graphite, may be used. Cars may be lubricated before inspection. No further lubrication will be permitted during the race, unless express permission is granted by the race officials.
- ❑ **Power:** The car must be freewheeling with no starting devices.
- ❑ **Inspection and Disputes:** Each car must pass inspection by the race officials before it may compete. The race officials have the right to disqualify those cars which do not meet these rules. The scout and parent will be informed of the rule violation and given an opportunity to modify the car to meet the pack rules. The race committee will review all disputes. Their decisions will be considered final. A disqualified car will not race, but it can still be considered for a design prize.
- ❑