

HOW TO MAKE A COOL LOOKING CAR

1. Type “Pinewood Derby” into Google and follow one of the 10 billion links

2. Tool safety

- Read all of the instructions and safety information that comes with your tools.
- Know how to use your tools!
- Wear eye protection at all times.
- Wear protective gloves when using sharp knives and chisels.
- Define a workspace and keep non-participants and pets away while working with tools.
- Keep all cutting tools sharp and in a safe place.
- Wear hearing protection when using power tools.
- Wear breathing protection and chemical proof gloves while using paint and thinners.
- Use paint and thinners as directed and only in a well-ventilated area.

3. Tools and where to buy them.

- The following is a list of the minimum equipment needed to build a pine wood derby car. With the exception of the power drill, you can find all of the necessary stuff for about \$25.00.
- Pencil and paper.
- A small Square.
- Clamp, Wood workers clamp or shop vice.
- Coping saw.
- Medium wood file.
- Sand paper . . . 50 grit, 100 grit & 200 grit.
- Power drill
- 1 can of spray sandable primer and a can of spray paint (for wood) Krylon etc.
- 1 tube of dry lubricant (graphite works well). (See hobby shop list)

All of this equipment can be purchased at your local hardware store or home improvement store. You might want to borrow a tool from a friend or family member.

Hint: You may want to visit your local hobby shop for dry lubricant and decals.

4. Design the shape before you start building the body.

- Have the scout draw his design on the template provided. It is important to draw both the top and side view of the car.
- Hint - Some good places to find a car design:
 - matchbox cars
 - magazines
 - Internet: e.g. Jay’s Pinewood Derby Page <http://www.3n.net/~jjenkin/pwd.htm>
- Cut out the design and use it as a template.
- Glue or tape the template to the block and mark the block with pencil, sharp point, etc
- Check the axle grooves for squareness.
- Dry fit the axles into the block.
- It is easier to adjust the axle grooves before you start to work on the block.
- This is also the best time to drill out or gouge out the proper amount of material to conceal the weights. Do not install the weights until the finished vehicle is available. Remember: The car can't weigh more than 5 ounces.

5. Holding the work and the rough cut.

- Cut the side profile 1st. Place the car on its side and hold it down with a clamp or vise. Be sure that the line to be cut is over hanging the work surface. (You don't want to cut through your Mother-in-Law's heirloom Chippendale table)
- Carefully use a coping saw to cut out the side profile.
- Lay the block flat and apply your template to the top.
- Place the car on its bottom and hold it down with a clamp or vise.
- Carefully use a coping saw to cut out the top profile.

Hint: a simpler approach is to keep the sides of the car straight and only cut out a side profile.

6. Rough shaping and sanding

- Place the car on its bottom and hold it down with a clamp or vise.
- With a medium cut wood file, round and shape the edges of the car.
- Starting with 50 grit sand paper, smooth out the work. Now this is going to take a while so 'be prepared'.
- Move to 100 grit sand paper then finish with 200 grit sand paper.
- You should now have something that resembles the design that you were hoping for.

7. Painting and decorating

- Make sure that your masterpiece is free from dust and particles.
- Using drop cloths and newspaper protect everything in sight.
- Place the car on a block of wood and spray on a light coat of sandable primer sealer. Let dry the recommended length of time.
- Lightly sand the entire car by hand with 200 grit sand paper and spray on a second coat of sandable primer sealer. Let dry the recommended length of time.
- Once thoroughly dried, paint the car with a quality made-for-wood spray paint in the color of your choice. Be careful and follow the manufacturers instructions. Don't spray on too much at once. You can coat lightly 2 or 3 times allowing the car to dry in between coats. Be careful not hold the spray can too long in one spot and create paint runs.
- You can buy molded car parts, water decals and stickers at the hobby shop. Use your imagination and creativity.
- PUT YOUR CAR NUMBER ON THE CAR!!

8. The Axles (Follow these easy steps to prepare the axles for racing.)

- Using your C-clamp or vise, secure your drill to the work table.
- Chuck an axle into the drill.
- With fine sand paper or a fine metal working file, de-burr each axle.
- (You can see the burrs below the head)
- Wet sand then polish the axle. (Hint: A polishing kit is available at the hobby shop)

9. Hobby Shops in the area that carry Pinewood Derby supplies:

- Joe's Hobby Center (35151 Grand River, Farmington) 248 477-6266
- Nankin Hardware & Hobby (35101 Ford Road, Westland) 734 722-5700