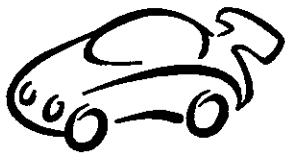


### **Step 1 Cut blocks of wood to desired outlines.**

The Shape N Race kit provides templates (side view) for a variety of designs. Paste the templates on thin cardboard and trim them with scissors. Have boys choose their designs and trace the outlines onto their wood blocks with a pencil. Then cut the outlines of the cars with a band saw or jigsaw. *Power tools should be operated only by qualified persons.* (Note: power sawing is best done apart from the meeting, but with the right tools, boys can be present and watch the procedure.) *Carving the outline with a jackknife is not recommended.*



### **Step 2 Shape and sand the car.**

After cutting the outline, shape and sand the car using a small plane, file or wood rasp and several grades of sandpaper. Use coarse sandpaper, then medium and fine. Boys may need adult help with special design features.

### **Step 3 Add weight to the car.**

The wood block weighs 2-3 ounces after shaping, so weight must be added to reach the maximum allowance of 5.0 ounces (142 grams) for finished Shape N Race derby cars. You will need an accurate scale, such as a small postal or kitchen scale. Be sure to include wheels and axles when you weigh the unfinished car.

Add weight to the channel on the underside of the car. You can use steel BBs, washers, small fishing weights or small nuts and bolts. Secure them in the channel with hot glue, putty or modeling clay.

Note: Because of the danger of inhaling or ingesting lead particles, do not use molten lead as weight. Also, avoid sanding, drilling or using any other procedures on lead items that can produce lead dust.

### **Step 4 Paint car body.**

Spray paint cars with enamel, which is more efficient than painting with a brush. Auto touch-up enamel

dries quickly and has a high gloss finish. Spray paints are also available from hardware or hobby shops. For best results, apply a coat of auto body primer before the finish coat to help cover blemishes. Use fine sandpaper or steel wool between coats of paint.

Suggestion: Make a "paint booth" from a large cardboard box to restrict paint overspray. Have plenty of newspapers available to protect other surfaces. Keep the room well ventilated.

### **Step 5 Apply stripes, decals and numerals.**

Check your local hobby shop for numerals, stripes and decals. Assign each car a control number and affix numerals. Boys may wish to add other finishing touches to enhance their cars.



### **Step 6 Mount wheels and axles.**

Each wood block has pre-cut axle slots. Mounting the wheels and axles correctly is the secret to a fast-running car. With adult help, start the axle into the slot with a small hammer. (You may wish to sharpen the tip of the axle and even predrill the slot to fit the axle square with the body of the car.) After positioning the axle in the slot, remove it, put it through the wheel and then tap it into final position. The wheel should fit close to the car body but still spin freely. When the axles are finally positioned, secure them with hot glue.

Some lubrication is desirable, but avoid messy lubricants like black graphite powder. Silicon oil, available at hobby stores, is one of the best lubricants and should be applied sparingly by an adult.

### **Step 7 Keep the car in a safe place.**

After the finished car has passed its final weight check, consider storing it in a safe place until race day. Naturally, a boy likes to play with his car, but he will be disappointed on race day if it has been damaged. Plan to keep the cars safe.



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