



# Finger Puppet Toy Race Car

Cover





# Finger Puppet Toy Race Car

Page 1

## INTRODUCTION:

This is a pretty simple project, great for the beginning woodworker and a wonderful end-product that will make a memorable gift for your child, grandchild, niece, nephew or even a worthy youngster you've never met. The whole idea was formed after seeing some Disney finger puppets online, and I thought they would make for cool characters inside a toy vehicle. Since I had a granddaughter and she was a fan of Minnie Mouse, it was natural to make this a Minnie Racer. But, the car could just as easily be painted bright red or blue or black for a boy's toy with Mickey or Donald or Goofy as the driver. Style the finished car however you like!

## WOOD SELECTION:

I chose to use hard maple because I had some in stock and it holds up to abuse like no other wood, but it's not a requirement for this project. Some clear store bought Poplar or knot-free finish quality pine will work too and be much, much easier to sand. Stacking up three pieces of ¾ inch lumber will get you a block thicker than 2 inches and you can just cut away the excess.

## ACCESSORIES:

All of the little add on pieces like the finger puppet, googly eyes and 1 ½ inch diameter wooden wheels and axles can be found either at your local craft store or of course, online. These are not expensive pieces to get. The tail lights made in the video are optional and were simply ½ inch dowel cut offs, coated with red tinted epoxy mixed with red glitter. You may choose another method to create tail lights and that's perfectly okay.

## TOOLS:

You will need access to a table saw and a band saw in order to cut the larger block pieces for gluing and then to cut the profile of the car against the provided templates. A belt sander is preferred because it will speed up the sanding of all the rounded contours, but this is not required. A spoke shave can help take off all the hard edges. Hand sanding with softer sponges work well on curves.

## TARGET TOY AGES:

Use your best judgment here. While my googly eyes are well stuck on with CA glue, you wouldn't want a toddler to bang the car on the floor until the eye popped out so they could try to eat it. I think 2 years old and up gets you past the "stick everything in your mouth" stage, but you know your child best. If they like playing with push and pull toys and don't eat things off the floor anymore, you're good to go. The tail lights and Minnie are really stuck on well too, so this is a low risk.

## SAFETY:

Read and follow all usage and safety instructions for any power tool you use and every chemical and finish you work with in. Wear protective eye, ear, and breathing equipment as you work with tools, dust and aerosols. Stay safe.



# Finger Puppet Toy Race Car

Page 2

## BUILD STEPS:

- (1)** Select your lumber. You'll need enough product to cut, stack up and glue up to yield a single block that is 9 inches long, 4 inches wide and 2 inches thick. If your working block is larger than this, that is fine as you will cut away what you don't need.
- (2)** Print the cut templates on page 4 on a standard 8 ½ X 11 inch or A4 piece of paper. Adjust / enlarge your print size as needed so that the graphic measures out at slightly less than 9X4X2 inches. In other words, the graphic will fit inside your wooden block dimensions.
- (3)** Cut out the graphics with scissors, stay exactly on the outer black perimeter.
- (4)** Using the larger top-down profile of the car graphic, apply some spray glue or glue stick to the paper back side and fix the graphic squarely on the block as shown in the video. With the block flat down on the band saw table, 90 degrees to the blade, cut the outer perimeter of the car graphic. You should have 2 flat areas left on each car side by the wheel wells. We'll need these flat edges for step 5.
- (5)** Using spray glue or glue stick on the back of the side profile graphic, carefully square up the printed graphic so that the bottom of the graphic is in alignment with the flat bottom of the car block. The wheel well paper graphic must be aligned with the flat areas from your first cut. The paper will follow the curve at the front and back of the car as you lay and stick the paper down.
- (6)** With a supporting block of squared up wood (a small block of 4X4 works best), use some double faced tape or hot glue to temporarily attach the 4X4 block to the side block of the car. The added block will help keep the car block down flat on the cutting table with the graphic facing up and make it easier for you to hold and cut the curved contours. See the video for how this was done on the band saw. Carefully keep the block down on the table and slowly cut the top profile of the car. A ½ inch band saw blade worked best for me on my project. Thinner blades are too flexible on the cut and thicker blades don't handle the curves well.



# Finger Puppet Toy Race Car

Page 3

**(7)** Using the drawing and measurements on page 6 and with the car block still up flat on its side in the vise, use a forstner bit to drill in the wheel wells.. The forstner bit size should be a little wider than the wood wheels. For my project, my wheels were exactly 1 ½ inches wide so my wheel wells and forstner bit was 1 11/16". Depending on what sizes you have, a 1 5/8" or 1 3/4" bit will work too. Drill only deep enough to accommodate the width of the wheel.

**(8)** Have fun sanding. Or at least, try to have fun sanding. Round over all the top of the car edges from front to back and smooth out all the band saw cut marks. The rounder your edges are the better, and it will make the whole car look well contoured.

**(9)** See page 7 for hole patterns to accommodate your accessories. You have lots of flexibility here on your design from headlights to tail lights and the locations you choose to drill them in. See the center hole dimensions that will accommodate a finger puppet.

**(10)** With accessory holes drilled, finish your final hand sanding, rounding over the edges of the drill holes and smoothing the outer body shape down with 220 grit paper. Make sure all contours are rounded and smooth.

**(11)** Stain or paint your outer body to your desired color. Use a black wood stain on your 1 ½ inch wheels. Wait for the stain to dry overnight and then finish with a high gloss lacquer or polyurethane finish over the body and wheels. Follow the safety and usage instructions, wear a respirator, wait for each coat to dry and lightly sand down any dust spots for the next coat. Use at least 3 coats of finish for a good shine.

**(12)** With all finishes dry, drill in the holes for your wheel axles. Depending on your wheel supplier, the axle hole diameter will vary. Most wood axle pegs are ¼ inch in diameter. Mine happened to be 3/16 inch in diameter. There should still be a pointed indentation left over from the forstner bit in each wheel well. Center your axle hole there and drill deep enough to accept each axle. Use a thin cardboard spacer behind the wheel (like in the video) as you install the wheels and axles. This will allow room for the wheel to spin freely in the wheel well from that small gap after removing the spacer. Glue in your center dowel for Minnie and hot glue the finger puppet over the dowel.(Page 6) Finish gluing in all your other features too.

**(13)** You're done! Have fun watching the face of the child you give this home made racer to!

# Finger Puppet Toy Race Car



## **The 4 X 9 Minnie Mouse Finger Puppet Racer**

**Print the graphics and use the outline as a drawing template on your wood stock. The overall dimensions of the wood block will be 4" X 9" X 2" thick. The wheel wells are designed to handle a 1 and ½ inch wide wooden craft wheel.**





## Axle Locations:

For both wheels on both sides, the center point for the wheel well cut out and for the wooden axle drill hole is the same when measured from the front or back of the block, and then from the bottom of the block.

From the front or rear bumper of the car, use a 90 degree square to line up on the flat side of the car, where the square then touches the back center of the bumper. The measurements from the front or back and then from the bottom of the wood block are listed below.

From the front or rear, measure a point **1 ¾ inches** from the end of the block.  
From the bottom, measure the intersecting point **3/8 inch** up from the base of the car.

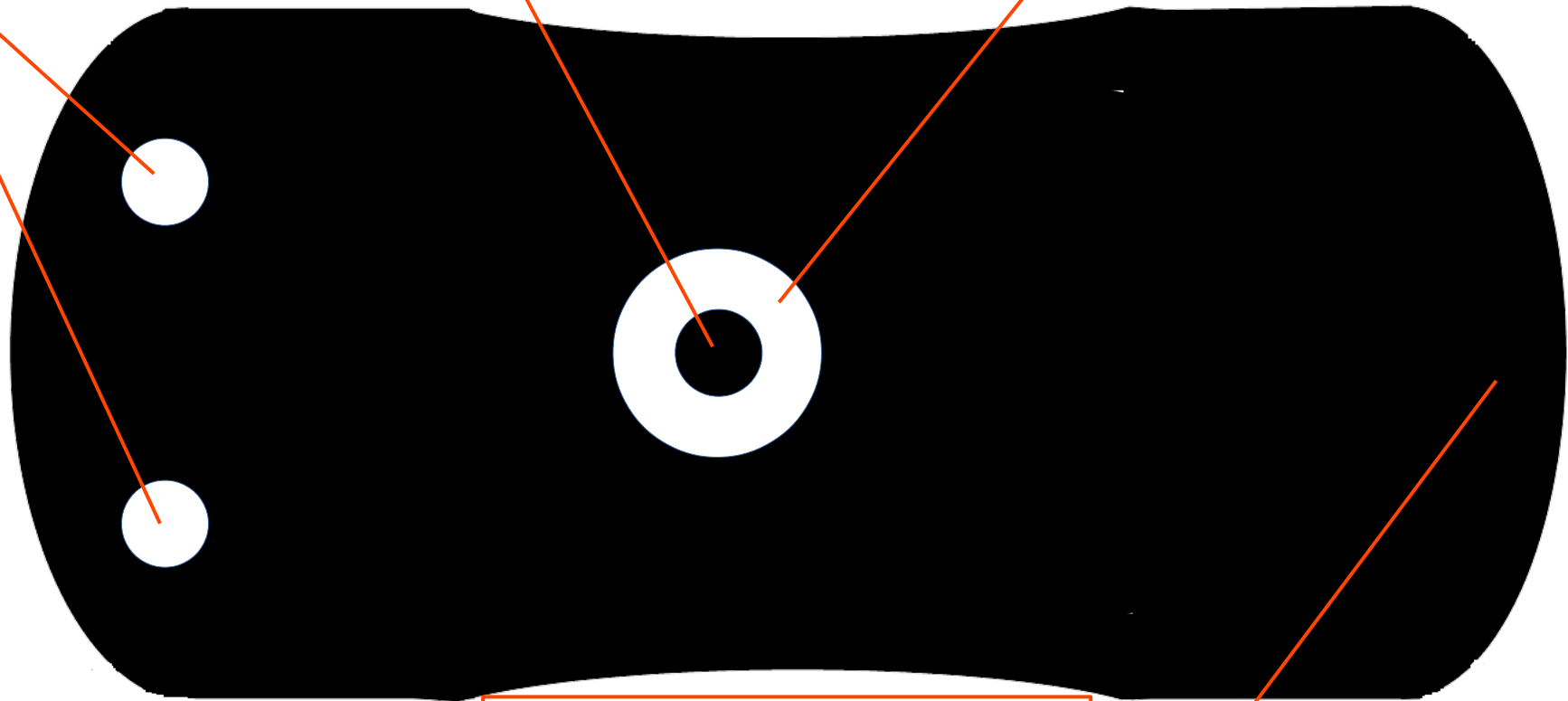
This point serves as your center mark for drilling out the wheel wells on both sides of the car. It is recommended to use a sharp Forstner bit for hollowing out the wheel wells, a bit size larger than the diameter of your wooden wheel. My project used 1 ½ inch wide wood wheels. My forstner bit was 1 11/16 in diameter. The forstner bit will also leave you a tiny guide hole after hogging out the wheel well, and this allows for the centering of the wooden axle plug.

# Finger Puppet Toy Race Car

Shallow headlight holes  
can hold googly eyes  
or be finished any way  
you prefer

$\frac{1}{2}$  " Wide center dowel rod  
Cut  $1 \frac{1}{2}$  " long  
Drilled  $\frac{1}{2}$  inch deep

Center wide hole allows  
Minnie to sit inside.  
Hole size  $1 \frac{1}{4}$  " wide  
Drilled  $\frac{1}{2}$  " deep



Tail lights can be added or not  
Finished any way you prefer



# Something Extra

Page 7

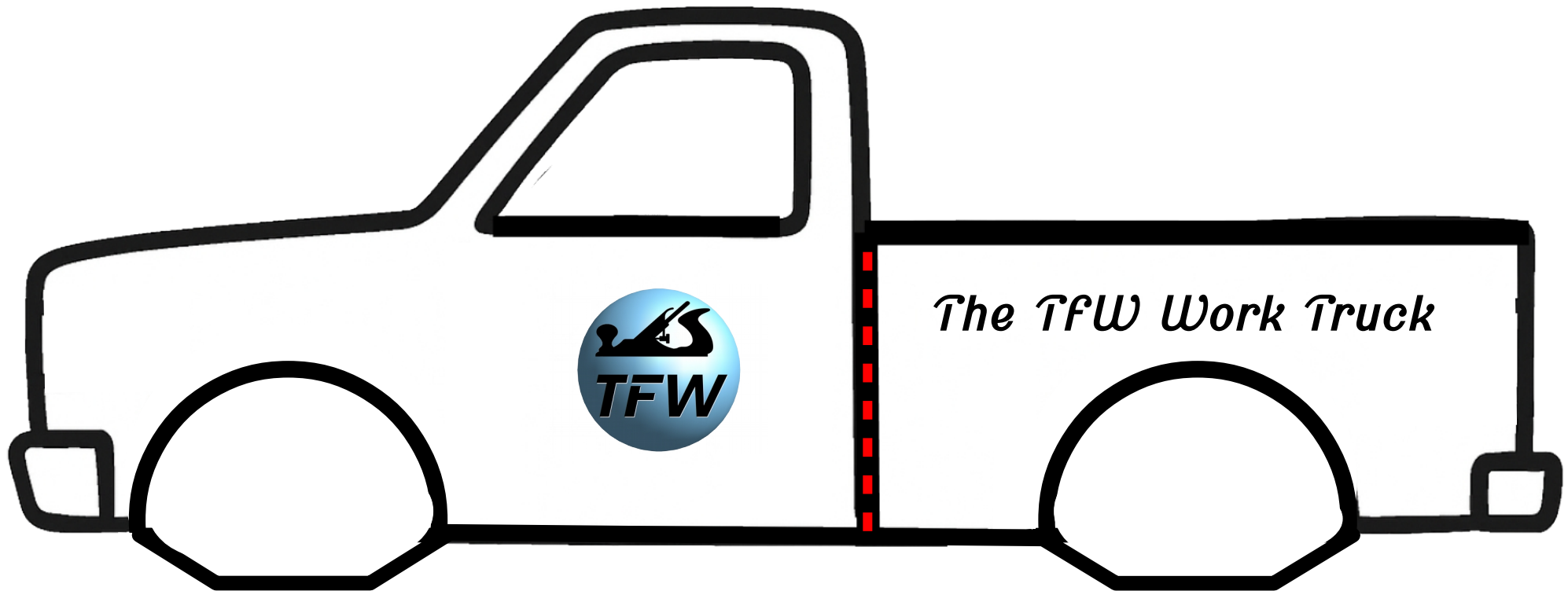
**Something extra  
Because free stuff is always cool**





## EXTRA... EXTRA...

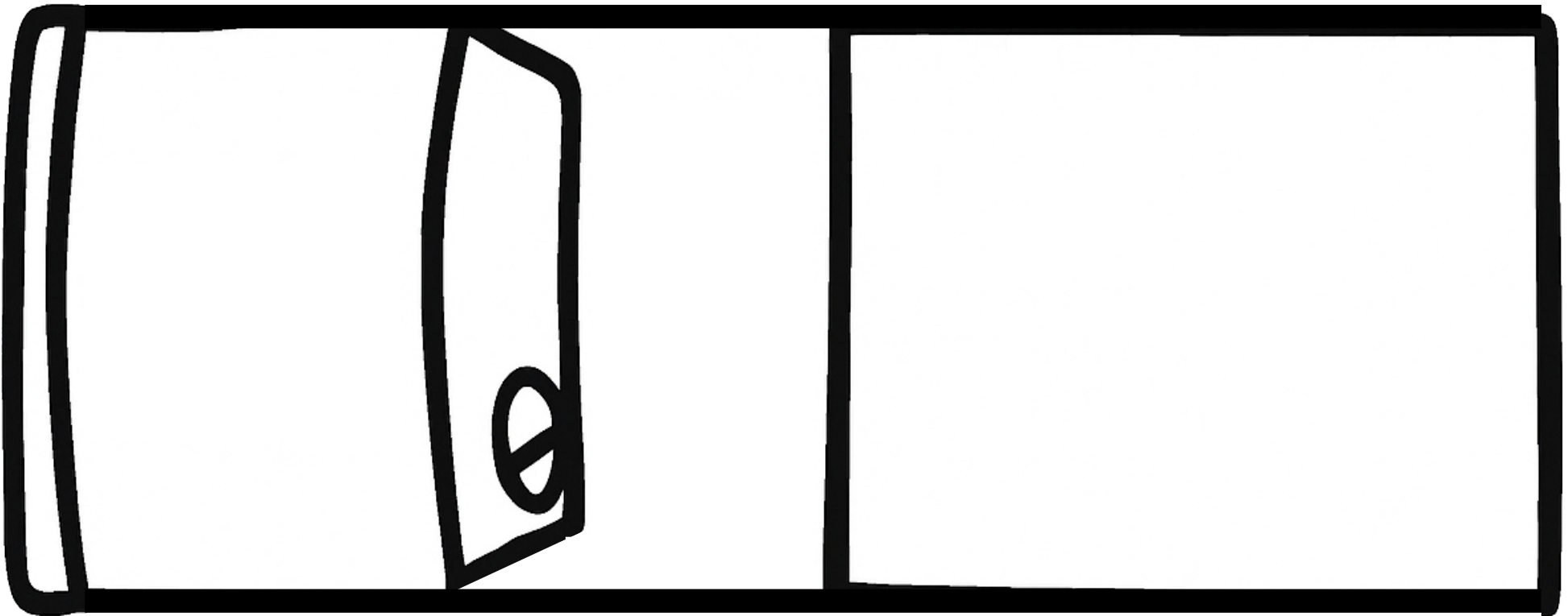
I had aspirations to maybe build a pickup truck rolling toy too, but ran out of time before other commitments started to take over. I thought I would include my rough drawings here in case you'd like to make a pickup truck for another child in your family. It is loosely based on a circa 1980's boxy pickup style of truck. Overall block size: 10" X 4" X 4"





EXTRA... EXTRA...

Top down view of the block:





EXTRA... EXTRA...

Shallow hole drill patterns:

