Rubber Band Car

1

Here’s what you need to make your Rubber Band Car:

• 1 square piece of corrugated cardboard (the kind with open tubes inside), about 5 1/2 inches square
• 2 CDs
• 1 wooden skewer (the thinner the better)
• 1 rubber band
• 2 pieces of Styrofoam, about 2 inches long and thick enough to fit tightly in the hole of a CD
• Tape
• Scissors
• Ruler

• TIP: If you don’t have any Styrofoam… Try out different materials in place of the Styrofoam. Get creative and use other things around the house to hold the wheels in place—old marshmallows, pieces of dry sponge, packing material, gummy candy, layered masking tape, etc. Try them all and see what makes your wheel work best!

2

Make the body

Hold your cardboard so the corrugations (tubes) run side to side, not up and down.

3

Make the body (cont’d)

• Cutting across the corrugations, cut out a 2 inch-wide and 1 1/2 inch-deep rectangle, making a notch in the center of one side.
• Throw away the piece you cut out.
4

Make the axle

Slide the skewer straight through one of the corrugations so it crosses the middle of the notch.

5

Make the axle (cont’d)

Make sure the axle sticks out the same amount on each side of the body.

6

Make the wheels

• Plug up the holes in the CDs with the pieces of Styrofoam. Make sure they stick out on each side of each CD by about half an inch. These are your wheels.

• NOTE: This picture shows the use of poster putty to hold the wheels together. After testing, we found that Styrofoam works better. But the picture still shows the poster-putty version.

7

Make the wheels (cont’d)

• Slide each wheel onto the axle, poking the end of the skewer into each piece of Styrofoam. Push the skewer straight through the hole of the CD, and out the other side.

• Slide the wheel so that the Styrofoam doesn’t rub on the cardboard.

• TIP: If the wheels are wobbly or crooked… Be sure that the material you use to hold them in place is firm enough to hold the wheel to the axle. Try reinforcing the connection with duct tape if they still won’t cooperate!
8
Create a “catch”
• Find where the skewer goes across the notch.
• In the middle of this section, wrap a small piece of tape to make a “catch” for the rubber band.
• *TIP: Stiff or thick tape makes the best “catch.”*

9
Attach the power source
• Tape your rubber band to the end of the cardboard opposite the catch.
• *TIP: A thin, long rubber band winds up better and might make your car go faster!*
• *TIP: If the tape isn’t holding the rubber band down… Try cutting two small slits in the side of the cardboard directly opposite the catch. Stick the rubber band into those slits for a more secure holder.*

10
Power your car
• Wrap the unattached end of the rubber band over the catch.
• Spin the axle a few times to wind up your car.
• Set your car on the floor.
• *TIP: If the axle isn’t spinning easily… Make sure that the holes through the cardboard are big enough. Try working the skewer around in the corrugation or sliding a pencil to make the hole for the axle bigger.*

11
Release it!
Let go of the axle, and watch your car zoom away!
13
Did you know?

When you wind up your rubber band around the axle, you’re giving it something called potential energy, meaning energy that’s stored to use later. When you let go, the axle spins and turns the potential energy into kinetic energy, or motion. The more you wind up the rubber band, the more energy it stores, and the faster and longer it goes!

Try this next!

• Make your wheels thicker. Try adding a layer of duct tape or thick paper around your wheels to give them more area to roll—it might make it ride more smoothly!
• Try out different terrains. Try out ways to make your car go over grass or sand! How can you make your car climb a ramp or go on water?
• Make a video. Attach a camera to your car and record its journeys!
• Make it smaller or bigger. Different-sized wheels can change the car’s speed. How about using two or more rubber bands?
• Start your engines! Tell your friends about Rubber Band Car and have them make cars, too. Then test your need for speed and see whose car goes fastest!