

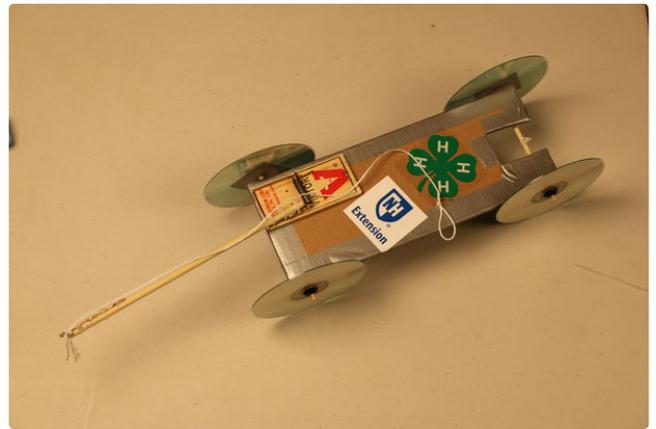
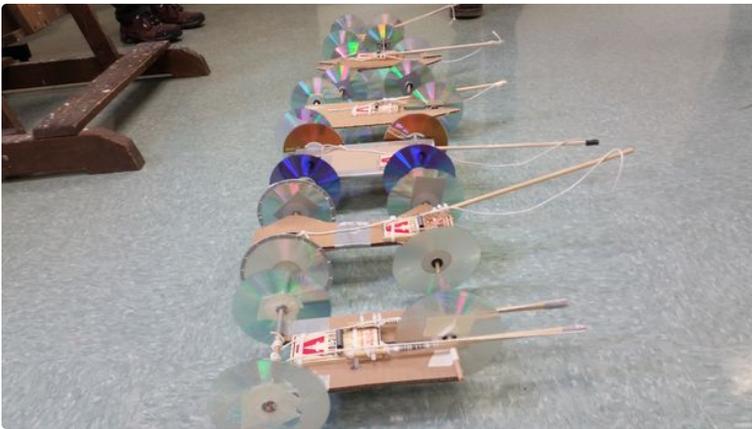


Build a Mousetrap Car



by CThelemarck

I made these mousetrap car plans to be used with 4-H clubs where I live in New Hampshire. While there are several other good mousetrap car Instructables and videos to be found out there and many car designs that travel faster and farther, I like these plans for their simplicity and ability to adapt and modify. It makes a great 4-H or class project that provides an opportunity to learn some basic physics and engineering skills.



<https://www.youtube.com/watch?v=d19Alpl8ef8>

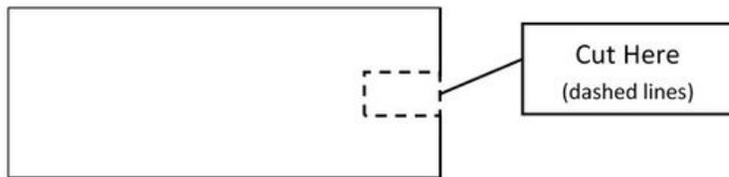
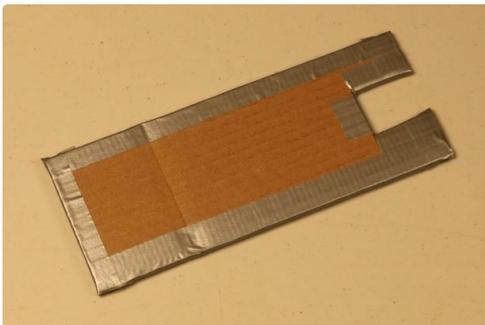
Step 1: Materials

- 2 pieces of Cardboard (4" x 10") many dimensions will work, but this is a good starting place.
- 4, DVD's (old used ones work great or new black ones from an office supply store)
- 4, 1/4L (19/32") Beveled Faucet Washers (found at most hardware stores in the plumbing dept.)
- 2, 3/16" Dowels - 6" long (these will need to be longer if you use wider pieces of cardboard)
- 1, 1/4 inch dowel, 10" long
- 2, Straws
- Tape – Masking & or Duct
- zip ties (an assortment of 4" & 8" works well)
- String
- Hot Glue



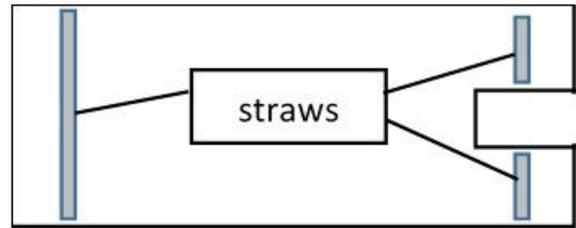
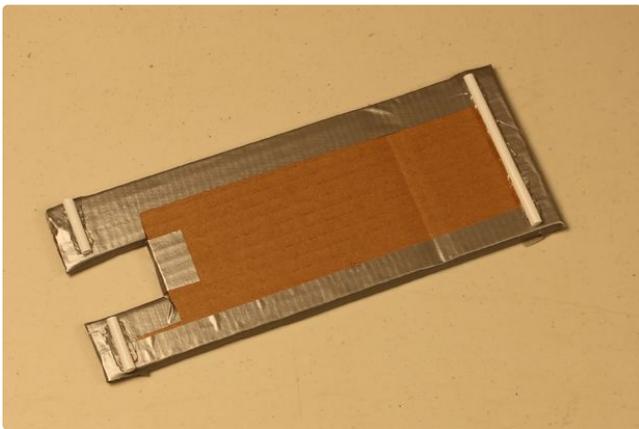
Step 2: Car Body

Take the 2 pieces of cardboard (about 4"x10") and cut a rectangular notch (about 1"x2") in the center of the short side of each piece of cardboard. Be sure that the notches overlap. Then place the two pieces of cardboard on top of each other and tape the edges together to make one double thick piece of cardboard. Make sure the notches line up.



Step 3: Attach the Straws

Cut 3 sections of straw to fit on the body of the car like in the illustration. Glue them in place using hot glue. This will be the underside of the car. Be sure the straws are parallel to each other and the leading (short) edge of the cardboard.



Step 4: The Mousetrap

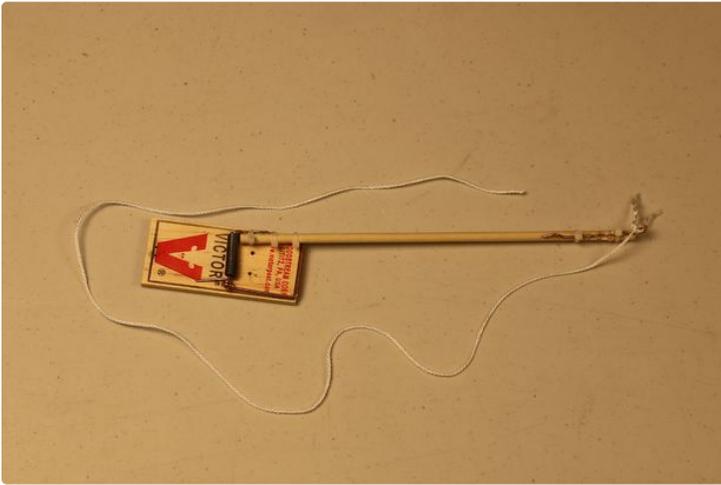
Take a mousetrap and remove the pieces that make up the release trigger (bait holder and wire bail, see picture). Use two or three 4" zip ties to secure the 1/4 inch dowel to the snap arm and reinforce with tape or hot glue. Glue the mousetrap in place towards the front on the topside of the car with hot glue. Be sure the dowel is pointing forward away from the notch in the cardboard and that the dowel also lines up with

the center of the notch when it is pulled back. See picture at the top of the Instructable for placement. Attach a piece of string to the end of the 1/4 inch dowel with a zip tie. It should reach a bit longer than hook on the rear axle. Tie a small loop on the end. The loop should just reach the hook on the rear axle.



1. Remove
2. Remove





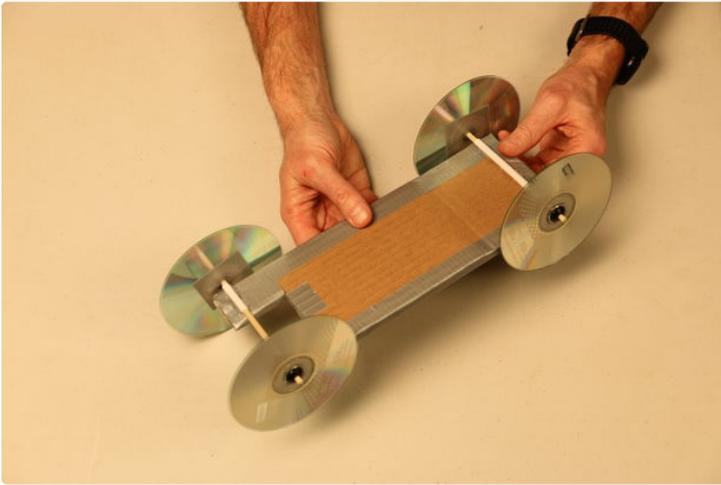
Step 5: Preparing the Wheels

Place a piece of duct tape over the hole in the center of the DVD. Turn the DVD over and place the faucet washer into the center of the DVD onto the tape. Use a generous bit of glue to hold it in place. Do this for all four wheels.



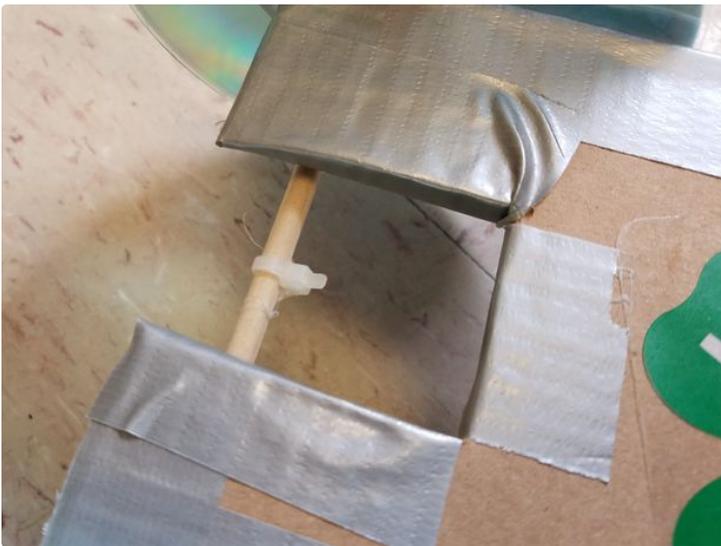
Step 6: Adding the Axles and Wheels

Place the 3/16" dowels into the straws and press the wheels onto each end. Sometimes the hubs can be hard to press onto the dowels. Rounding or slightly sharpening the ends can make this easier. At this point you should test the car to see if it rolls straight. If not you may need to straighten the straws.



Step 7: Attaching the Hook to the Rear Axle

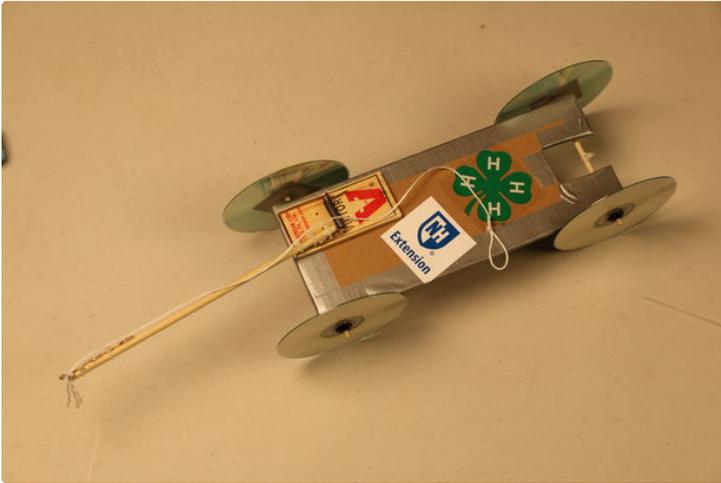
Attach a 4" zip tie to the center of the axle exposed by the notch in the cardboard, and cut it short, about 1/4 inch. This is the hook for the string. A dab of glue will help keep it in place.



Step 8: You're Done!!!

You should now have a car that looks something like the picture. Attach the string to the hook and wind it backwards. Put the car on the ground and let it go and it should start rolling away from you. Take some time to get to know your car. It will likely take some tinkering and practice to get it to roll straight and smooth. Once you've got it working well. Run it several more times and when it goes, watch it

carefully to see if you notice anything that might be hampering its performance. See if you can tweak it to make it go better. Once you have a good idea how the car works, see if you can design another car that can travel even farther. Try different materials for the body, axles, wheels etc.



<https://www.youtube.com/watch?v=fHN3lb6wNzI&feature=youtu.be>



Those are fun cars, this would be a neat class project!