

## Wacky Racers Derby *for*



We were looking for a central activity for our New Jersey Makers Day celebration. New Jersey Makers Day is a program where libraries, schools, museums and other institutions celebrate maker culture, and making.

For this year's Makers Day (our third one), we decided to feature a craft where kids (alongside adults when applicable) could make cars from odds and ends and race them down our derby track. The craft would feature engineering concepts, as kids would experiment with design of their car, and things they could do to make it go faster (i.e. add weights) as well as encourage the idea of recycling materials on hand.

**Materials- Cars:** We gave each kid 4 wheels and 2 axles.

The wheels were plastic one we purchased from Amazon, and the axles were wooden matchsticks. (Matchsticks were perfect as they were pre-cut and exactly the right size).

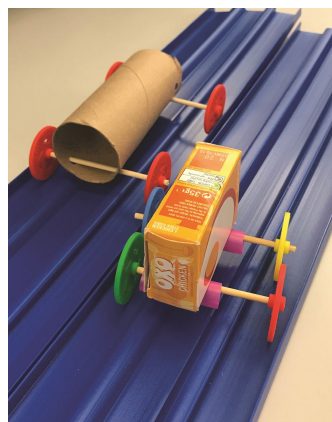
From there, anything can be used to build a car. This is the "casserole of crafts". It just so happened our Youth Services department was cleaning out their closet, so I asked them to pull out things they never use, or have too many of.

Recommended materials we used: straws, binder clips, toilet paper tubes, pipe cleaners, wooden sticks, a deck of cards, googly eyes, feathers, adhesive foam shapes, tiny water bottles, cups, rubber bands, pennies (to add weight), duct tape, and washi tape, markers.

We set up materials on a table and encouraged kids to grab a paper plate and collect materials buffet style. While we had a few examples cars, we encouraged participants to build whatever they imagined.

**Ramp:** One of our staff members offered to build us a ramp. He used a leftover piece of wood that had been used as scaffolding when the atrium in our teen area had been painted. He watched a youtube video to get a feel for a basic ramp design. He used carpet tape to attach plastic tracks, which we purchased from the local scout shop. We then used a ruler to hold back the cars, and allow them to evenly race side by side.

**Costs:** Wheels: 2x \$19.99 for 100 (note, that is 25 cars, if each uses 4 wheels), Match sticks- \$2.99 for 140 Ramps Tracks- \$15.99 for 5 track pieces (6' long) But disregard these prices, because...



**What we could have done differently:** For cost, and environmental reasons, all the plastic in this program could have been replaced by cardboard. The wheels could have been rounds of corrugated cardboard, either purchased, or cut by a die cut or laser cutter (in the past our local makerspace, has cut felt circles for us). You can also find wooden wheels at many crafts stores. The ramp could have been made using cardboard or foam core board (a bonus if you are looking to reuse these materials).

**Feedback:** Kids LOVED it. Age participation ranged from ages 3-12. It was a project that lead itself well to having family units work together. Kids could spend hours and hours racing their car against each other and adding to the car. Girls who had brothers in boy scouts

especially enjoyed being able to participate, because they had watched their brothers make cars for pinewood derbies but had been unable to make and race their own cars.



**So proud of their unique and clever designs!!**

