Like many things that are fun, there’s potential danger in building and riding soap box carts. The ideas here are not guaranteed and you should check anything you do is safe enough for you and those around you. If you might even consider blaming someone else for some harm that comes from you reading these ideas, please stop reading now and shred this document (carefully!).

Build a Go-kart

First Edition

**Designs**

The *Dangerous Book for Boys* has a design for a simple go-kart so that’s a good starting point.

The *Soapbox Bible* by Julian Bridgewater is an illustrated guide to the design and construction of soapbox carties. It contains detailed drawings and step by step instructions for building a variety of carties, including "Soapbox Racer", "Dragster", "Two Man Cart" and the all time classic planks and pram wheels design that features memorably in nearly everyone’s childhood. The designs are all firmly at the low-tech end of the spectrum. Available on Amazon.

**Designs online and useful websites**

*Kartbuilding.net* has lots of ideas and designs including this one: [http://www.kartbuilding.net/Wooden_Go-Kart_Plans/index.html](http://www.kartbuilding.net/Wooden_Go-Kart_Plans/index.html). Note the additional ideas at the bottom of the webpage. Also, the floor pan could be made out of 19mm plywood instead of planks of wood.


[http://www.mission.museum.bc.ca/soapbox-buildracer.html](http://www.mission.museum.bc.ca/soapbox-buildracer.html)

*The Scottish Cartie Association* has loads of inspiring photos and an area of resources with bits of designs: [http://scottishcarties.org.uk/](http://scottishcarties.org.uk/)

For loads of ideas take a look at the *Soapbox Racing UK* gallery: [http://www.flickr.com/groups/soapbox/pool/with/5046851172/](http://www.flickr.com/groups/soapbox/pool/with/5046851172/)

The Red Bull soapbox race website is worth looking at if for no other reason than to get some motivation... [http://www.redbullsoapboxusa.com/](http://www.redbullsoapboxusa.com/)

Components or bits of designs

Seats
You can construct a basic seat but old plastic chairs unscrew easily and are simple to bolt/screw onto a “floorpan”. Make sure you’ve got something to stop the driver sliding off when cornering.

Two Bikes
A great design idea is strapping two bikes together and connecting the steering.

Trike
A basic trike can be built by attaching the front forks, steering tube, handle bar and some of the front frame to the front of your floorpan. Steering and front wheel all sorted in one go.

Steering
If you make a traditional plank cart with the front wheels attached to a pivoting plank you will probably find that it has a tendency to over steer. Attach stoppers on the cart to stop the steering plank moving more than about 10 degrees in each direction and use bungees from the ends of the steering plank to the cart to help recentre the steering.

Simple Ackermann steering set-up

http://jalopnik.com/5399652/mystery-seat-from-20r-sprite-hell-project-lives-on-in-illegal-

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soapbox-derby-racer

**Front forks**  
Front forks from a bike mounted horizontally can be quite good as rear wheels and you get the brake mounting sorted at the same time. Forks aren’t nearly as strong in this direction so be careful how you load them.

Designed and built by former Aston Martin employee Roy Pink of Roy Pink Cycles, Newport Pagnell

**Wheels**  
For the old school racers amongst you can buy Silver-Cross wheels from [http://www.heritage-prams.co.uk/spare-parts-c-52_58.html](http://www.heritage-prams.co.uk/spare-parts-c-52_58.html).

Wheelchair wheels are designed to be bolted from one side only so are great for attaching to carts. The three wheel jogging prams/buggies can provide side mounted wheels too.

B&Q do pneumatic wheelbarrow wheels for about £8 each.

If you are using bike wheels, the axles from the rear wheel are longer so when fitted to a front wheel give more external length to attach to the cart.

Some bike shops will sell you second hand rear wheel axles for a few quid.

Try Ebay for parts or even a ready built kart for you to modify/upgrade (search for “soapbox” or “go-kart”, “BMX” – then filter “used”)

Lots of races/competitions are on grass so small wheels will just sink. 10” wheels are about a small as you can go...but if you use smaller wheels test it out on grass first

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**BMX wheels** generally have thicker/stronger axles so are more suited to mounting from one side only. The picture shows a length of angle iron, bolted to a plywood floorpan and a bike wheel bolted to the angle iron. Use threadlock/PVA to stop the nuts undoing.

**Safety**

Some pointers

- No sticking out sharp edges
- Everything securely attached
- Protect arms/legs/fingers etc from slipping into rotating wheels/moving parts
- Picture what will happen in a head on crash – make sure you’re not going to impale yourself
- Wear a helmet (eg bike helmet) and gloves even when testing