

That's How We Roll

I WAS IN THE SECOND GRADE WHEN MY

father built a go-kart for my cousin and me. It was made from lumber and four new wheelbarrow tires. Steering was accomplished by putting one foot on either end of the front axle, which was connected to the go-kart's frame with a single large bolt. To slow down while going downhill, all you had to do was grab the wooden lever attached to the side of the go-kart with another large bolt, pull back on it, and let friction do its work as the wood dug into the asphalt (we had to replace the brake frequently).

The go-kart was the hit of the neighborhood. All the kids wanted to ride it, and we'd take turns weaving around the tin-can slalom course we'd set up on a gently sloped road, timing our runs with a stopwatch. Soon other dads in the neighborhood built go-karts for their kids and we'd race each other.

In time we graduated from go-karts to minibikes. These gasoline-powered two-wheelers were a step up from gravity-powered vehicles. The noise, smell, and power of the minibikes intoxicated us for a few summers in our junior high school years.

Those memories came flooding back when we started creating the Karts and Wheels package in this issue of MAKE. I hope the projects in these pages will help you rekindle some of your own childhood memories, as well as provide your kids with opportunities for fun, adventure, and learning.

It probably goes without saying, but I'm going to say it anyway: Wear a helmet! When I was a kid, nobody wore helmets when they rode bikes, skateboards, go-karts, or minibikes. Please don't make that mistake today.

One spring day when I was 15 I rode my skateboard down a steep hill, and the only thing I remember from that afternoon is waking up covered in blood in the back of an

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ambulance. I broke my nose, lost some teeth, received stitches for several cuts on my face, and concussed my brain. Fortunately, I didn't suffer anything worse. Today, my kids put on their helmets automatically whenever they ride their bikes or skateboards.

If go-karts and minibikes aren't your thing, don't despair — we have plenty of wonderful projects in this issue. We'll show you how to make a Rubens tube that emits jets of flame to display waveforms of any sound you play through it. We'll show you how to grow and harvest your own delicious (really!) spirulina in a modified aquarium. And we'll show you how to make a nifty self-contained electronic sound effects box called the Luna Mod.

One more thing: I'd like to remind you about Make: Projects, a terrific free service we set up for anyone to write and publish how-to projects. We recently ran a Karts and Wheels contest — you'll find winner Jeremy Ashinghurst's "Weekend Warrior" gravity racer on page 60. Check makeprojects.com for the upcoming robot competition!

Mark Frauenfelder is editor-in-chief of MAKE.