

Paul McCarr's

**EASIER
PAPER
ROCKETS**

FORWARD

Obviously, this is anything but a new idea. These overgrown “straw rockets” have been around for decades, and I make no pretense to ownership of the ideas upon which my simplified design is based.

This simplified design is a direct result of trying to make it easier for kids to make these awesome rockets. The first version of my pattern simply featured a simple line to show where you could color and still have it visible after you rolled it up. Next, I added marks for where the fins should be on the rolled tube. Then I added pre-printed fins that could be cut out from the bottom of the page.

I was actually quite happy with that, but this popular activity had two major problems: First, it used boatloads of Scotch tape, which is expensive; second, even with the alignment marks the fins were often misplaced, off kilter, and a source of major drag. However, these two problems were not the genesis of my improved design, even though I made repeated attempts to figure out a better solution.

Instead, one morning as I was cleaning my room after a particularly messy MESA Club meeting where we had made several hundred rockets to shoot to kids in the crowd during our homecoming parade, one of my first period students came in and asked what we had done that was so messy. In answer I picked up what I thought was an unused sheet and rolled it up to demonstrate. To my surprise, this blank sheet was actually one of the printed sheets of fins we had been using, except it had been accidentally cut in the wrong place and tossed aside. As I rolled it up, the diagonal cut in the side stayed straight and true and stuck out of the side like a perfect little fin. A few simple additions to the pattern and PRESTO the best flying paper rocket I had ever made. It had perfectly aligned fins and it used only a third as much tape.

They are so easy and cheap to make now that we use them as promotions for events and sell them as fundraisers. I hope you enjoy them, too. If you make a good template, send it to me and I will add it to the PDF. I can be contacted at mccarlp@gmail.com.

Preparations:

Cut Your Pipe

You will need two sections of ½" PVC pipe (0.875" O.D.). One section will be used to make the roller tube and should be approximately 12" long. The other section will be used as the launcher tube and must be at least 12" long, but 15" is easier to hold when launching rockets. If you intend to drill a hole for a gas pressure sensor tube, 18" of pipe will give you room for your sensor and still be comfortable to hold during use.

Make a Roller Tube

Cut a strip of paper 2¾" x 11". Place tape along both long sides with approximately half the tape width overlapping the edge. Take the 12" section you cut for the roller tube and attach one taped side of your paper strip to it. Smooth the tape to insure a tight edge. Tightly roll the pipe until the second strip of tape is firmly adhered to the pipe. This thin layer of paper on your roller tube will insure that your rocket is just slightly bigger than the pipe used for launching. This will give optimal performance. If the rocket is too loose, you will get poor distance flights due to launching prematurely. If the fit is too tight, it will be nearly impossible to get the rocket on the launcher and you will lose distance due to excessive friction during launch; it will also lead to frustrating damage to the inside of your rocket.

Make a Launcher Tube

The section you cut for the launcher tube can be used as is; however, you can trim with a knife or file smooth the outer edge of one side to make it easier to fit your rockets to the tube. A small hole can be drilled in the launcher to insert a tube for a gas pressure probe.

Use Scotch tape to tape this edge to the table with the printed side face up. Next, pull the tape off of the table with the paper and turn the sheet over, so the printed side is down. Roll the rocket around the roller tube you created by wrapping paper around a section of pipe. Start rolling from the side without tape. Be careful as you reach the end to not damage the fins. Rolling with the fins off the edge of the table can help. The tape should adhere to the rolled section as you finish rolling the sheet.



