

# THE AMAZING FLYING DAREDEVIL



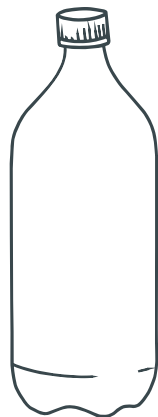
## EXPERIMENT: STOMP ROCKET

Rev up the excitement at your science carnival with a daredevil who harnesses the power of pressure to launch himself like a rocket through the sky!



### MATERIALS

- Pool noodle
- Tube that fits into the pool noodle, like a short piece of 1" PVC pipe or a glow stick canister
- 2-liter bottle
- Ping pong ball
- Duct tape
- Scotch tape
- Paper
- Fabric
- Markers
- Scissors
- Hula hoops or other rings (optional)

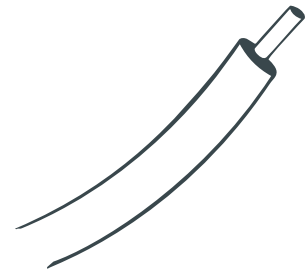
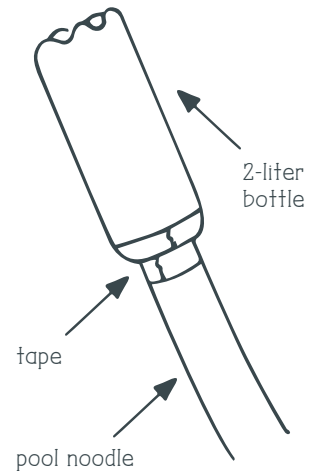


### INSTRUCTIONS

Build the launcher by inserting the mouth of the 2-liter bottle into one end of the pool noodle and secure thoroughly with duct tape, trying to make it as air tight as possible. Insert the PVC piece or other tube into the other end.

Make your daredevil by rolling a piece of paper so that it fits inside the launching tube. Check the diameter by putting the paper roll into the pipe and letting it unwind so it fits snugly, then tape the roll so it remains that size. Remove the paper roll.

Draw an awesome face or attach a photo on the ping pong ball, then use Scotch tape to secure it to one end of the paper roll. Make a cape from a piece of fabric and attach it near the ping-pong ball head.



Load the daredevil into the tube. Place the 2-liter bottle on the ground and aim the launcher. It may be easier to ask a partner to hold the launcher for you. Stomp on the bottle to watch the daredevil fly! To launch again, just blow forcefully into the tube until the bottle re-inflates.



## TIPS

The duct tape or bottle will eventually wear out from stomping. When that happens, cut off the end of the pool noodle and attach a new bottle.

If you don't have a pool noodle, any tube you can make airtight will work, such as a bike inner tube or PVC pipe.

## MORE WAYS TO PLAY WITH ROCKETS

See real rockets – including artifacts like the Apollo 8 spacecraft and the Apollo 11 training module – in MSI's Henry Crown Space Center.

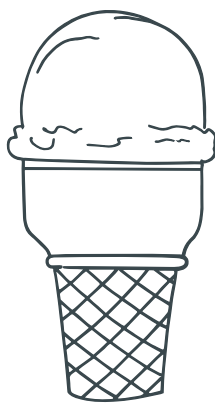
## LIKE THIS ACTIVITY?

You could be a ...

- Rocket scientist
- Pneumatic engineer
- Aerospace engineer
- Pilot

## GAME ON

Adjust the launcher's angle and see what sends the daredevil the farthest. Does how hard you stomp on the bottle change how far he flies? Challenge your buddies to a friendly competition and see whose daredevil flies farthest. Hang hula hoops or rings from a tree branch, assign a point value and see who aims best. Reward the winner with a cool summer treat!



## WHAT'S HAPPENING?

When you stomp on the bottle you compress, or squish, the air inside. This compressed air has to go somewhere, so it escapes through the easiest way out – which is the other end of the launcher. By placing the daredevil over the other opening, this escaping air pushes him out of the way!

If the compressed air didn't have an escape route, like the launching tube, the container would burst. That's why compressed air or gas containers like pressure cookers and propane gas cylinders always have a safety valve that keeps the pressure from getting too high.

### ▲ SAFETY FIRST:

It's a good idea to aim into a clear area where you know your friends (and their eyeballs) are safe from unexpected daredevil collisions.