

Stomp Rockets

What Do I Do?

1. First, you will make the rocket launcher. Attach one end of the inner tube or vacuum hose to the mouth of the plastic bottle with duct tape. The other end of the inner tube or hose should be taped securely to the PVC pipe.
2. Now we need to create the rocket. Roll the cardstock around the PVC tube, but not too tight that it cannot slide off. Add a piece of masking tape so that the paper does not unroll.
3. To make a cone for the top of your rocket, cut a circle out of the cardstock and use scissors to make one cut from the edge to the center. As you bring these edges together, the cone gets narrow. Adjust the size to match the base of your rocket and tape it securely onto the base so that no air can escape.
4. Now cut out triangular fins and attach them with tape. You may also want to decorate your rocket using markers or other items.
5. When you are ready to launch your rocket, find a safe place outside. Slide the rocket onto the PVC tube and place the bottle on the ground. Grasp the PVC tube below the rocket and point it towards a safe location away from yourself and other people. Now stomp on the plastic bottle and watch your rocket take off!



What Do I Need?

- a plastic bottle
- bicycle inner tube or vacuum hose
- 2 foot PVC tube ($\frac{1}{2}$ or $\frac{3}{4}$ inch diameter)
- cardstock
- duct & masking tape
- scissors
- markers

Now Try This!

Experiment with your rockets to discover what would happen if you made the tube longer or used a larger bottle. Can you change any variables to make your rocket launch higher or faster? Create a target and try to land your rocket in the same place a number of times. Is it easy to hit your target?

What's Going On?

When you stomp on the bottle, the volume is reduced and air gets forced out. The air escapes out the mouth of the bottle and through the tube towards the rocket. In order to escape, the air pushes up on the rocket causing it to launch. As you launch your rockets, watch the speed of your rocket as it leaves the tube and as it hits the ground. When does it go the fastest?