

POLYMER ROCKET

Materials List

- 2 pieces of foam plumbing insulation tubing (1 piece = 12" and 1 piece = ½")
- 2 cable ties (there are many types, use whatever works best for you)
- 1 rubber band
- Craft foam sheet (a letter size sheet should suffice)
- Scissors
- Wire cutters (optional)
- **Low temperature** glue gun
- Glue sticks for glue gun
- Paper
- Pencil/Pen

How to Build Your Polymer Rocket — Adult supervision required

1. Begin by sketching out blueprints for your rocket's wings. Be creative and experiment with various designs—you will be using these later.
2. Attach one cable tie loosely to the rubber band. This should form a "chain" link between the tie and the rubber band. You have now formed the **launch device**.
3. Taking the 12" piece of foam, check to see if it is sealed along its length. If it is not sealed, use glue, tape or any other adhesive material to seal the tube. This forms the **rocket body**.
4. Taking the launch device, place the cable tie portion completely into one end of the rocket body. Secure this by tightening a second cable tie around the tip of the tube—forming a clamp. Now your launch device should be locked into the rocket body.
5. Using scissors or wire cutters, cut off any excess portions of the tie that stick out. Next, take the ½" piece of foam and wrap it around this end of the tube, covering up the plastic tie (you may have to cut the foam in order to wrap it around the end, and then glue/tape it together again). This additional foam wrap is used to cover up the hard plastic edges of the tie, which can hit your fingers while launching the rocket.
6. Referring back to the blueprints for your rocket's wings, transfer these designs onto a sheet of craft foam. Cut out the wings using scissors.
7. It may be helpful to use a partner during this step. Attach the wings to the bottom of the rocket body using the glue gun—keeping the launch device at the top. Be very careful during this process since serious burns may occur from the glue itself or the tip of the gun. Also, be aware that the tip of the glue gun may burn a hole in the foam if contact is made directly to it.
8. Allow all glue and materials to dry before testing/launching your rocket.
9. Now it's time to launch your rocket! Do this in a "slingshot" manner. Place the rubber band around the tip of your thumb, and then pull back and let go of your rocket.