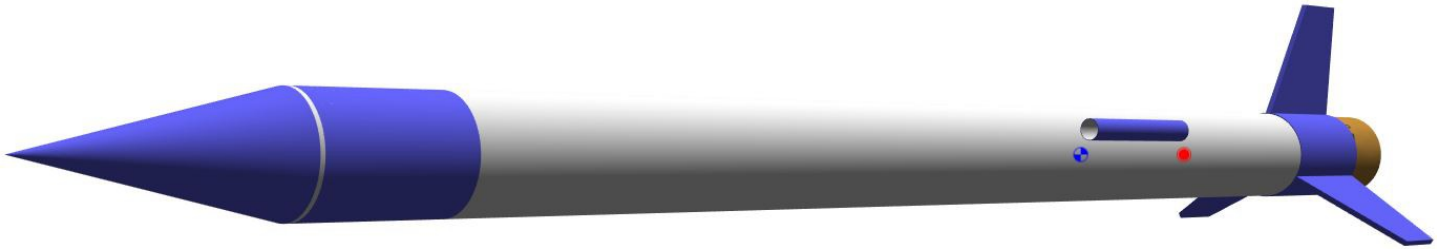
A Very Simple Rocket



Recommended motors: A8-3, B6-4, C6-5

Parts:

A Very Simple Rocket pattern printed on a sheet of 11” x 8.5” 110 lb. cardstock or posterboard
Used 18mm rocket motor for nose cone base
1/16” braided nylon cord, 48 inches long for shock cord
Medium-sized rubber band
2” x 24” Mylar streamer

Tools and Supplies

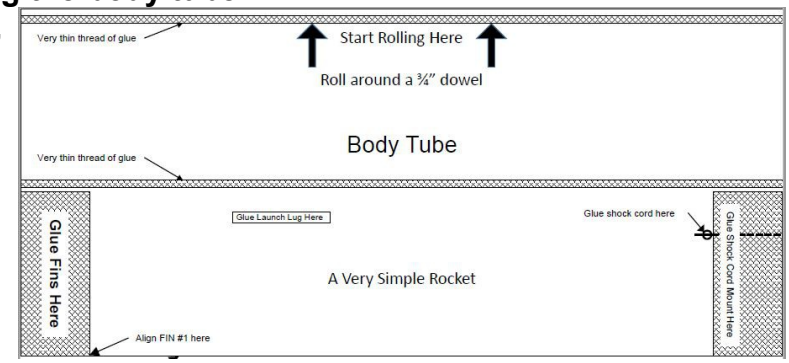
Scissors and/or a sharp craft knife and ruler
3/4”x11” wood dowel or 4 used 18mm motors glued end-to-end (form for body tube)
1/8” wood dowel or 1/8” bamboo skewer (form for launch lug)
Elmer's Glue-All (Best) or White School Glue
Optional – Thin Cyanoacrylate Adhesive (Super Glue)

Note: Print out several of the rocket patterns. Don't be afraid to start over if the results aren't good at first, especially the body tube and nose cone. You will get better with practice.

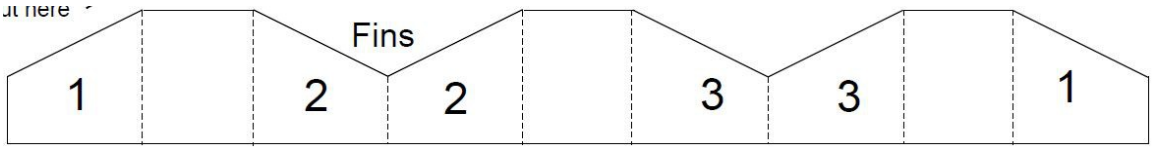
Note: The glue will dry much quicker and warp the cardstock less if you use small amounts and spread it out thinly.

Please read all the instructions before beginning. Test fit parts before gluing.

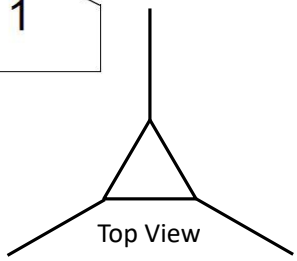
Making the body tube



Cut out the body tube along the long, straight, solid line.
Start curling the body tube around a 3/4” dowel.
Roll it several times to get a smooth, round shape that fits tightly around the dowel. The quality of the body tube has a big effect on the quality of the finished rocket.
Once the body tube rolls tightly around the 3/4” dowel, put a small thread of glue along the long edge. Do not get glue on the dowel.
Continue rolling the body tube around the 3/4” dowel until it almost completely rolled.
Put a thin line of glue along the full length of the inside edge of the body tube.
Finish rolling the body tube around the 3/4” dowel with the edge glue down flat.
Once the glue is dry, slide the body tube off the dowel.

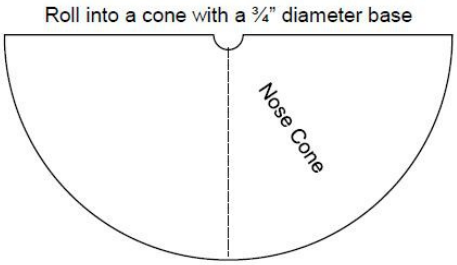


Making the Fins



Cut out the fins on the solid lines.
Fold the fins on the dashed lines.
Starting with the 2's, and then the 3's, glue the fins together, with like numbers back to back, using a thin coat of glue on each fin.
Finish with the 1's. There should be a triangular opening in the middle and the edges of the fins should line up and the fins should be flat.

Making the nose cone



Clean out ashes from a used 18mm motor casing.
Cut a piece of braided nylon cord 12 inches long.
Tie the ends of the cord together with a double knot.
Put a big drop of glue on the knot
Thread the loop of cord through used rocket motor from the top and down through the nozzle. A piece of stiff wire will make this easier to do.
With the loop of cord coming out of the nozzle, put a big drop of glue on the cord where is comes out of the nozzle to hold it in place.
Attach a rubber band to the loop.
Cut out the nose cone.
Roll the nose cone into a cone shape with a 3/4" diameter base. This is a little more than the diameter of the used rocket motor.
Put glue on the edges of the nose cone and press it down so it holds its shape. You may need to do this more than once to get good results.
Glue the base of the nose cone to the top end (the end opposite the nozzle) of the used motor. Make sure the nose cone is centered on the top of the used motor.

Making the Launch Lug

Cut out the launch lug.
Roll the launch lug around a 1/8" dowel (or a large bamboo skewer).
Glue the launch lug but don't get glue on the dowel.
Once the glue is dry, slide launch lug off of the the dowel.

Final Assembly

Once the glue is dry on all the the parts, slide the Fins over the lower part of the body tube.
Line up the fin marked "1" with the long edge of the paper on the body tube.
Test fit the fins by lining up the bottom of the fins with the bottom of the body tube.
Slide the fins back a little ½ inch.
Put a ring of glue around the body tube just above the fins.
Slide the fins forward until the bottom of the fins are once again even with the back of the body tube.
Glue the launch lug to the area marked "Glue Launch Lug Here" using a moderate amount of glue.
Make sure the launch lug is straight.
Tie a knot into one end of the remaining 36 inches of braided nylon shock cord.
Glue the shock cord to the top of the body tube along the dashed line with the knot below the area marked "Glue Shock Cord Mount Here"
Glue the shock cord mount to the body tube in the area marked "Glue Shock Cord Mount Here"
Tie the shock cord to the rubber band on the nose cone.
Tie the shock cord near the rubber band to one end of the streamer.

Allow 24 hours for the glue to dry thoroughly before flying the rocket.

Tip: The ends of the body tube and the fins can be reinforced by soaking them with thin Super Glue.

Preparing the rocket for launch
Recommended motors: A8-3, B6-4, C6-5

Wrap the rocket motor at the nozzle end with enough tape for a snug fit inside the body tube.
Insert the motor into the body tube.
Put about 2 inches of wadding loosely into the top of the body tube and push it lightly down the body tube.
Fold the streamer compactly and slide it and the shock cord and rubber band into the body tube. It should fit loosely in the body tube.
Put the nose cone onto the top of the body tube. It should fit just tightly enough so it won't fall off when the rocket is turned upside down. Use masking tape to adjust the fit.