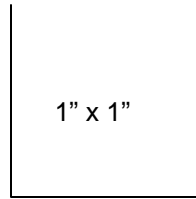


Lil Spike

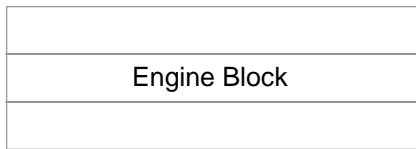
Use 110 lb Card Stock Paper



Fin Covers

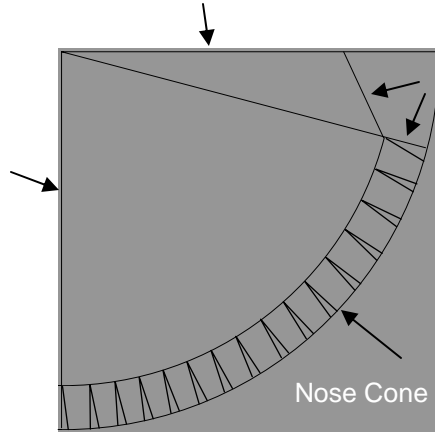


1" x 1"

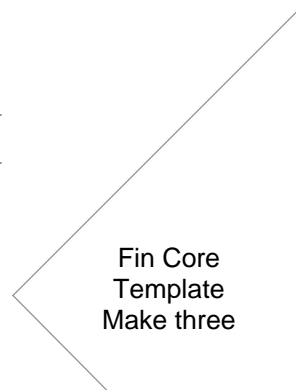


Engine Block

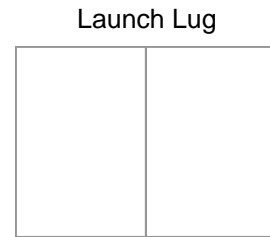
Cut along lines marked by arrows



Nose Cone

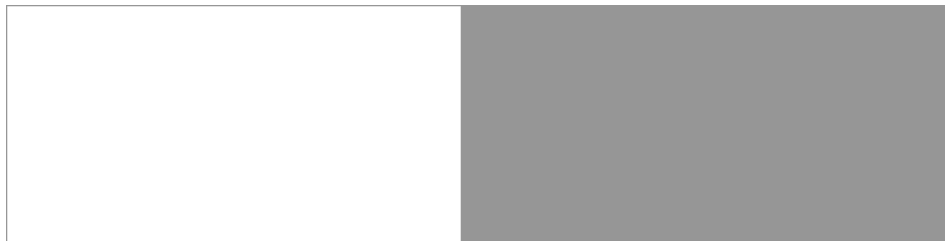


Fin Core Template
Make three

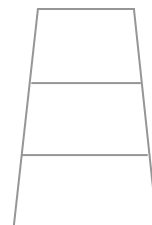


Launch Lug

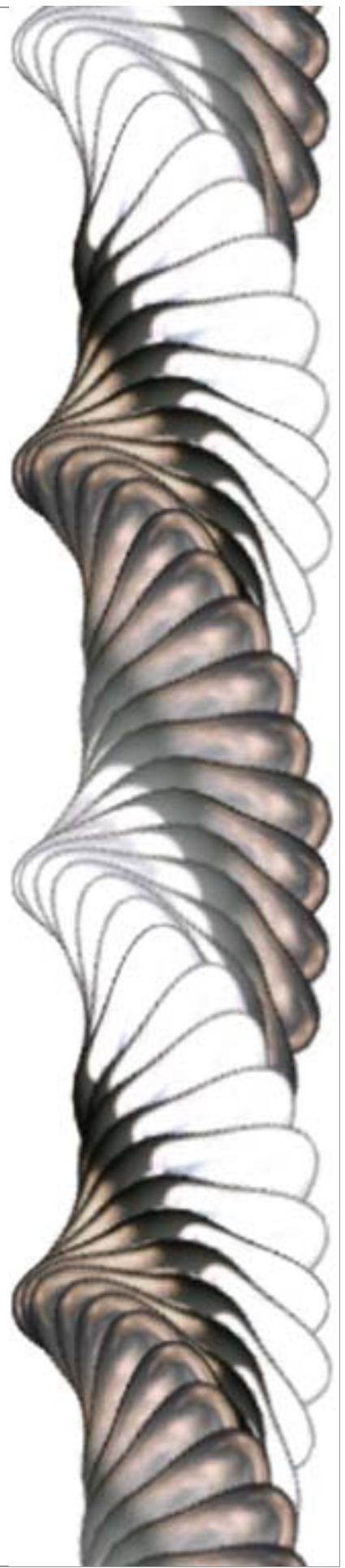
Inside section



Nose Cone Collar



Shock Cord
(Make two)



Body Tube — Roll with engine casings to get proper fit

Building the Lil Spike

Airframe:

Mark the reverse side of the body tube sheet with a line using the front side line as your guide. This is where the glue will start as it is important not to get glue beyond this line. Rolling the body tube is made easier by first using engine casings to start the rolling process. Apply gentle pressure and roll the tube only until the inside edge touches the other side of the cardboard (one complete revolution). Then, use a 1/4" wood dowel to roll the same section of tube once again, producing a smaller radius of curvature; do this two or three times to set in a tighter curl. Then go back with the engines casings and roll the tube completely. This process will make it easier for the leading edge of the paper to meet at the proper point without creasing. Once the tube has taken on the proper form, apply rubber cement to the paper up to the last 1". Roll the tube and when completed, use white glue to fasten the last 1" of tube. You can use white glue throughout and get a stiffer tube, but the rubber cement has worked well for me and is not as messy.

Score the lines of the engine block with a ball point pen to make the folds easier. Then fold and glue. Before the glue sets, roll the engine block using a 1/4" wood dowel to set the curl. The two edges of the paper should meet to complete the block. Test fit in the tube. If too large, cut a small section of the block off and then glue the block 2 1/4" in from the rear of the tube.

Nose Cone:

Carefully cut out the nose cone following the guides. Cut the small "v" shaped slits along the base of the nose cone creating a saw tooth pattern. Shape the nose cone by rolling the pattern over a narrow dowel or very small pencil. Cut out the nose cone collar and roll it around the top of the completed body tube (place an engine in the tube to hold its shape.) Once the curl is achieved glue the nose cone collar together making sure it fits snugly but not too tight over the body tube. Place a drop of glue on the end of each tab at the base of the nose cone and carefully attach the nose cone to the nose cone collar. Press the tabs to the collar until the glue sets. When completely dry apply a fillet of glue to the outside joint between the collar and the nose cone and set the assembly aside to dry.

Fins:

Cut out three fin cores out of illustration board using the template as a guide. Cut out and glue the fin covers to each of the fin cores. Sand the root edge of each fin and glue to the body tube aligning the bottom of each fin with the rear of the body tube. When dry apply a fillet of glue to each fin.

Roll and glue the launch lug (using the line to help achieve an 1/8" diameter opening) about 1 3/4" from the rear of the body tube.

Cut out two shock cord mounts from regular paper (using the template as a guide.) You can use 1/8" elastic, or Kevlar cord for the shock cord. I would recommend about 2' - 2.5' of elastic or 2.5' to 3' of Kevlar. Glue one end of the shock cord to one of the shock cord mounts using the typical Estes technique. Create a loop about 8" from the other end for the streamer to be attached. Glue the remaining end to the remaining shock cord mount. Glue the shock cord mount attached to the longer length of shock cord to the inside front of the body tube about 1/2" in. Glue the remaining shock cord to the inside of the nose cone shoulder as far up into the shoulder as you can. Attach a streamer to the loop in the shock cord.

Test the completed rocket with an engine mounted for stability. Add some clay to the inside of the nose if needed (I found added weight wasn't necessary.)

Since the template already has the artwork pre-printed all you need do is spray the completed rocket with clearcoat a couple of times to protect the model against moisture and handling.

Friction fit an engine, add about 1-2 squares of wadding, attach the nose cone and launch!

I would recommend 1/2A6-2's for first flight, then A8-3 for next. A C6 will put it way the heck up there! The Lil Spike flies straight as an arrow.