Art Applewhite Rockets

from deep in the heart of Texas

13mm Six Rocket Assembly Instructions

Diameter – 0.6 inches, Length – 12.7 inches, Weight – 0.6 oz

Recommended motors: 1/4A3-3T, 1/2A3-2T, 1/2A3-4T, A10-3T

Materials needed: One 8.5" x 11" sheet of 110 lb Card Stock or Poster board, 24" of 1/8" Elastic Cord, 2 Paperclips, 1" x 24" Mylar Streamer(optional), Cellophane tape,

Tools and supplies needed: #11 Exacto® knife, Metal Ruler, Fine tipped ballpoint Pen, Sharp toothpick, Elmer's Glue-All®, 5-Minute Epoxy, Clear Enamel, Super Glue (optional)

Although this rocket looks simple, it requires attention to detail and a degree of craftsmanship. It should be considered a skill Level 2+ project and only be attempted by an experienced modeler. For best results the steps should be performed in the order given. Send comments and suggestions to Art Applewhite at rocket877@aol.com .

Tips:

- Read through the entire instructions before beginning.
- Use a new #11 Exacto® knife blade.
- Test fit all parts before gluing them.
- Work on a clean surface, in a well-lighted area.
- Keep your hands clean and free of glue.
- Use only the material specified, they are all cheap and readily available.
- Do not use yellow glue in place of white glue. Yellow glue shrinks when it dries and it looks nasty.
- Do not use too much glue. Too much glue will make the cardstock limp and increase drying time. Put a small bead of glue on the cardstock and spread it out thinly and evenly with a craft stick.
- All the cuts on this rocket are straight lines. It is best to use a craft knife and metal ruler to make all cuts.
- Crease the cardstock where it is to be folded with an old (dried up) ballpoint pen and a ruler. Make all folds straight and sharp.
- Cut and fold directly on the lines.

The following items are available at most Wal-Marts:

- Devcon® 5 minute Epoxy, about $2 in the Home Improvement section
- Georgia Pacific110 lb cardstock, about $5 for 150 sheets of White or $6 for 150 sheets of assorted colors in the Office Supplies section
- 1/8" round elastic, less than $1.00 for 5 yards in the Sewing and Crafts section

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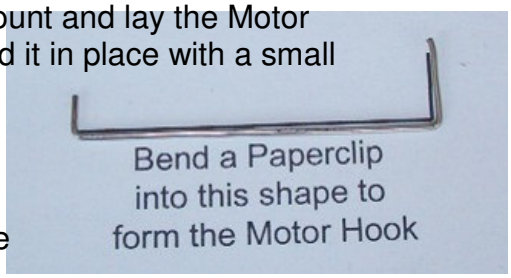
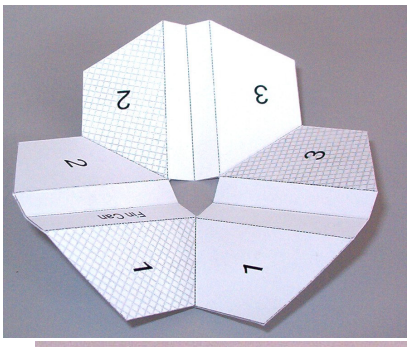
Motor Mount and Fin Can Assembly

1. Make creases in the card stock on **ALL** the dashed lines on all the parts with a fine tipped ballpoint pen and a metal ruler. This step is **very important**, if the creases are not made beforehand it will be very difficult to make straight folds in the cardstock.
2. Cut out the Motor Mount and fold on all the dashed lines away from the printed side.
3. Form the Motor Mount into a six-sided tube and spread glue thinly on the shaded area.
4. Glue the Motor Mount together.
5. Fold down the small tabs at the end of the Motor Mount and glue them together to form the motor stop.
6. Bend and cut a Paper clip into the shape of the Motor Hook.
7. Make a small hole, with a sharp toothpick, in side of the Motor Mount just below the top for the Motor Hook.

8. Put the long leg of the Motor Hook into the hole in the Motor Mount and lay the Motor Hook along the folded edge in the side of the Motor Mount. Hold it in place with a small piece of tape.



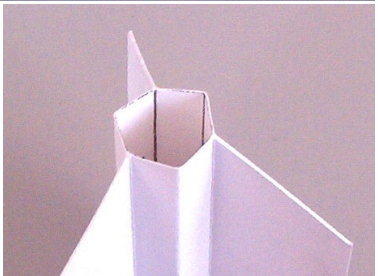
9. Cut out the Fin Can and fold along the dashed lines. Some of the folds are toward the printed side and some fold away from the printed side.
10. Glue the fins together by spreading glue thinly and evenly in the shaded areas and pressing the fins firmly together. Make sure the Fins are flat.

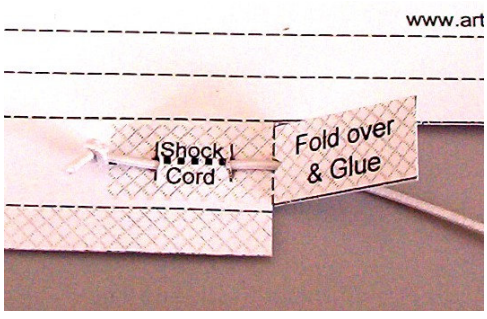


11. Test fit the Fin Can over the Motor Mount and Motor Hook.
12. Put a moderate amount of glue on all six sides of the Motor Mount.
13. Slide the Fin Can over the Motor Mount and Motor Hook. Until the bottom ends of the Fin Can and the Motor Mount are even. The Motor Hook should be sticking out about 1/4" from the bottom of the Motor Mount and it should be able to turn enough to release the motor when necessary.

Shock Cord Mount

14. Cut out the Body Tube.
15. Make two short cuts for the Shock Cord and push a sharp tooth pick through the cuts to widen them.
16. Make a hole at the fold line to the right of the words "Shock Cord" for the Shock Cord to go through.
17. Tie a knot in the end of the Shock Cord and thread it through the short cuts and the hole.
18. Put a moderate amount of glue on the "Fold Over" tab and then fold it over the Shock Cord.
19. Press the tab down firmly over the Shock Cord and hold in place until the glue dries.
20. Put a fillet of glue on the backside of the Shock Cord where it threads through the card stock. Set it aside to allow it to dry thoroughly.





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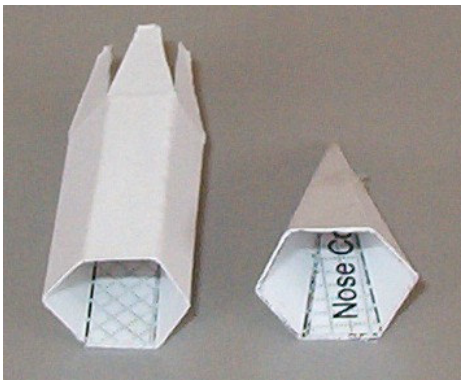
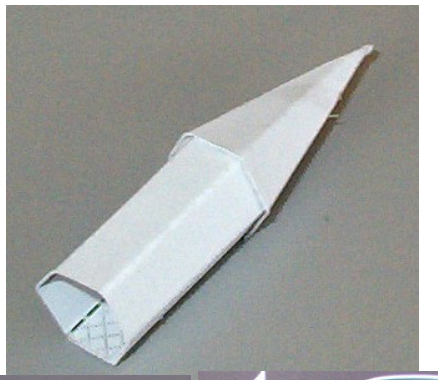
Nose Cone Assembly

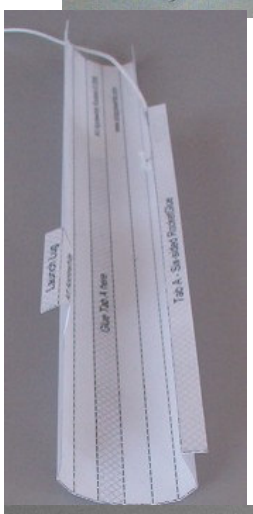


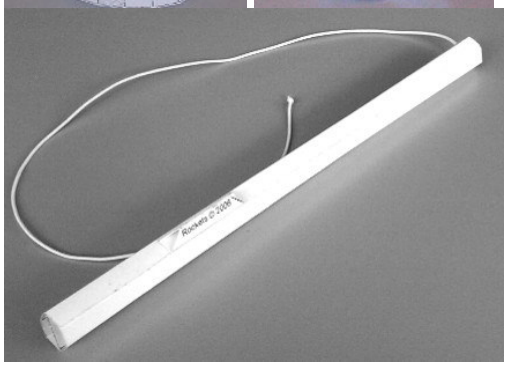
21. Cut out the Nose Cone and fold on all the dashed lines towards the printed side.
22. Form the Nose Cone into a six-sided cone shape and glue with the shaded tab inside.
23. Cut out the Nose Cone Shoulder and fold on all the dashed lines toward the printed side.
24. Form the Nose Cone Shoulder into a six-sided tube and glue with the shaded tab on the inside.
25. Put glue on all six tabs on the end of the Nose Cone Shoulder and insert it into the Nose Cone. Make sure the tabs are glued to the inside of the Nose Cone.
26. Fill the Nose Cone with 5-Minute Epoxy and put a paperclip into the epoxy with one end sticking up to make a loop for the shock cord. **Do not skip this step**, without it the nose cone will be too light for the rocket to be stable. You may use a different epoxy for one specified but do not use clay in place of epoxy.



Body Tube Assembly

27. Fold on the all the dashed lines of the Body Tube toward the printed side except for the Launch Lug and Tab A. Be careful to make all the folds straight and sharp.
28. Fold the Launch Lug over with the printed side out to form a three-sided tube.
29. Glue the shaded tab marked "Launch Lug" to the outside of the Body Tube.
30. Glue "Tab A: on the edge of the Body Tube to the shaded area in the middle of the Body Tube. Make sure Tab A is completely flat against the inside of the Body Tube and its edge is just inside the dashed line.
31. Form the Body Tube into a six-sided tube and glue together. Make sure the glued side is flat along its entire length.
32. Make a fillet of glue on both sides of the Launch Lug where it attaches to the Body Tube.





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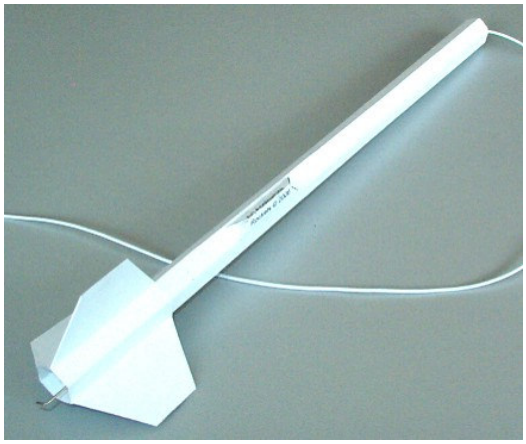
Final Assembly



33. Test fit the Body Tube into the end of the Fin Can. The back end of the Body Tube should rest against the front end of the Motor Mount.
34. Glue the Body Tube into the Fin Can with a moderate amount of glue. Make sure the Fin Can and the Body Tube are in a straight line.
35. Tie the Shock Cord to the paperclip at the base of the Nose Cone and put a dab of glue on the knot.
36. (Optional) Make sure the fins are flat and straight, then soak them with Super Glue. This will make them stronger but it may discolor the cardstock.
37. (Optional) Soak the forward end of the Body Tube with Super Glue to strengthen it.
38. (Optional) Tie a 1" x 24" streamer to the middle of the Shock Cord to make the rocket descend more slowly.
39. Spray the entire rocket with 2 light coats of clear enamel to protect the cardstock and glue from moisture.

Launch Preparation

- Recommended motors: 1/4A3-3T, 1/2A3-2T, 1/2A3-4T, A10-3T
- Slide the motor into the Motor Mount and set the Motor Hook.
- Pull the Shock Cord straight.
- Put 2 sheets of recovery wadding into the top of the Body Tube on past each side of the Shock Cord mount.
- Put the shock cord (and streamer) loosely into the Body Tube. Make sure it is not tangled.
- Put the Nose Cone into the Body Tube.
- To avoid damage from the motor exhaust, support the rocket at least 6 inches above the blast deflector.