

Balloon Powered Hovercraft

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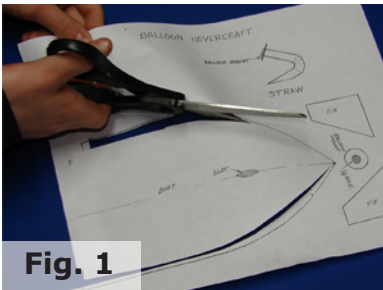
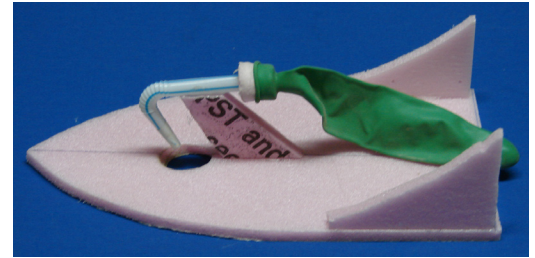


Fig. 1

MATERIALS NEEDED:

- 1 piece – 4 X 10 inch heavy card stock, cereal box paper, or ¼ inch or ½ inch thick Styrofoam. This makes the body. Choose one of these materials. Material must be flat with no twists, bends or folds.
- 1 piece – Large diameter flexible straw. Straw should be able to bend more than 90 degrees.
- 1 piece – masking tape
- 1 piece – Cool melt glue gun or white glue (Elmer's)

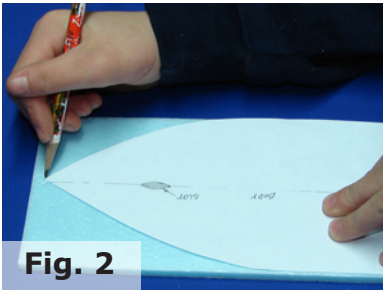


Fig. 2

INSTRUCTIONS:

1. Cut out the templates. (Fig. 1)
2. Trace the shape of the body from the template onto a piece of 4 X 10 inch piece of card stock paper or Styrofoam material. Mark the shape of the two fins and small circle. (Fig. 2)

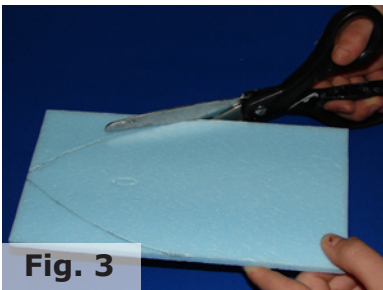


Fig. 3

3. Cut out the shape of the hull. (Fig. 3)

4. Mark location for straw hole. (Fig. 4) Cut your ¼" diameter hole as shown on the template. The hole can be cut by an adult with a very sharp knife or by rotating a sharpened ½ inch piece of copper plumbing pipe thru the paper or Styrofoam. You can also use a pencil with the eraser removed. Cut the hole with a 30 degree backward-slant (toward the rear of the vehicle). If using card stock – cut straight down. Remove any debris from making the cut. The bottom should be very smooth. (Fig. 5)

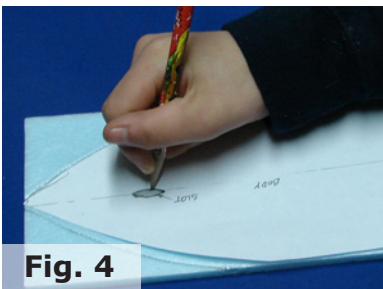


Fig. 4

5. Cut the flex straw so there is 1 inch on one side and 1 ¾ inches on the other side of the flex section. On the 1 inch side, make a cut about ¾ inches long so the end can be squeezed down to about ½ the original diameter. Hold this together with a short piece of masking tape. (Fig. 6)

6. Cut the 5/8 inch diameter circle (about the size of a dime) from the cardstock or foam. (Fig. 7)

7. Drill or cut a ¼ inch hole thru the center of the circle. (Fig. 8)

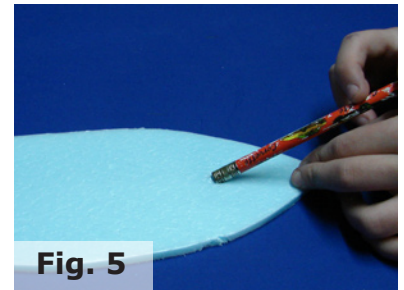


Fig. 5

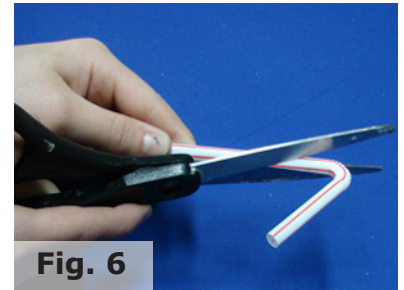


Fig. 6



Fig. 7

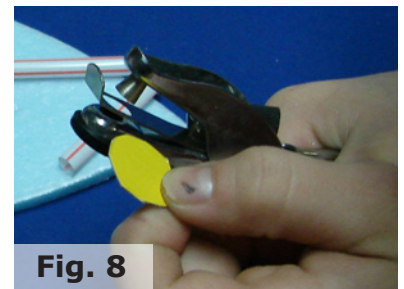


Fig. 8

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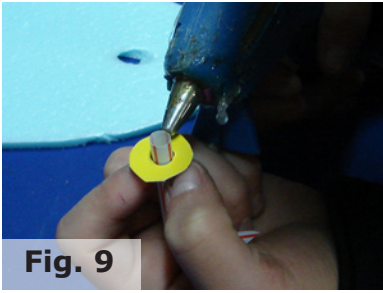


Fig. 9

8. Glue the circle to the 1 3/4 inch end of the straw about 1/8 to 1/4 inch from the end. A cool melt glue gun works best for this because it makes an air tight joint. If using white glue; sand the straw at the ends where it will be attached to the hull and balloon circle. Glue together using several layers of glue until joint is air tight. (Fig. 9)

9. Stretch a 7 or 9 inch balloon over the circle so it extends straight back from the straw. (Fig. 10)

10. Glue the straw with the balloon into the hull so it slants 30 degrees toward the rear of the craft. Don't let the straw extend below the hull or it will cause drag and your craft will not hover. (Fig. 11)

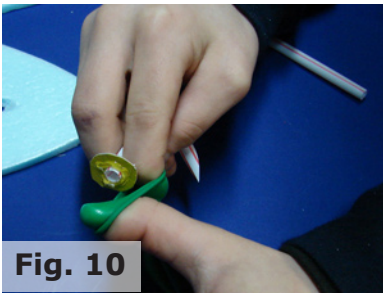


Fig. 10

11. Cut out the two fins. The fins can be made from card stock or Styrofoam. Nine inch diameter Styrofoam dinner plates can be cut to make nice fins. The primary purpose of the fins is to hold the inflated balloon in the center of the body. (Fig. 12)

12. Glue the two fins to the rear sides of the body. (Fig. 13)

13. The balloon is inflated by inserting the cut off piece of straw into the the end of the mounted straw.

14. After inflating pinch the neck of the balloon, remove the inflating straw and release the hovercraft on the floor. (Fig. 14)

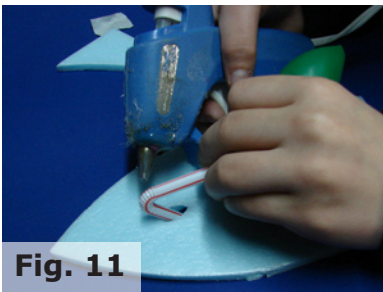


Fig. 11

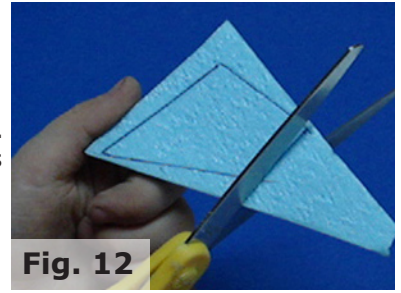


Fig. 12

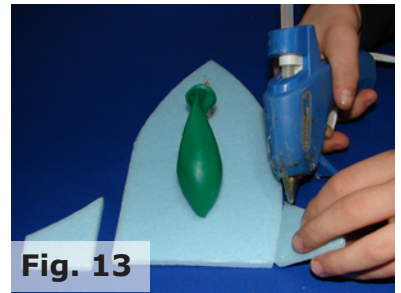


Fig. 13

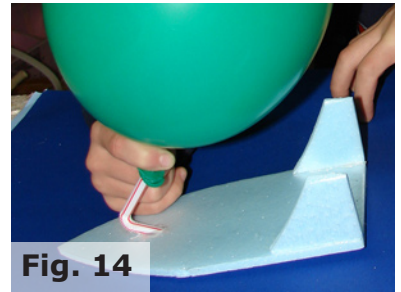


Fig. 14



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