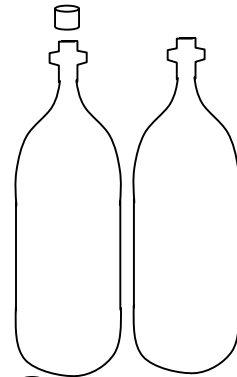


Pack 61 Water Rocket Assembly Guide

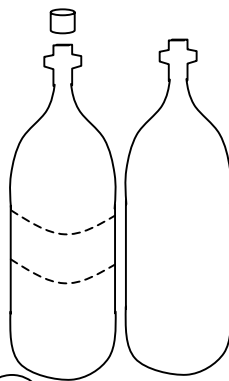
(2005 Edition)

Materials (to build one (1) rocket) :

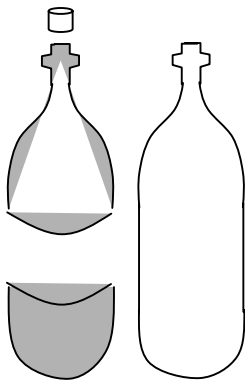
- Two 2-Liter plastic bottles & one cap
- Scissors
- Small eye screw or bolt with nut
- Drill
- Clear Packing Tape
- Thin sheets of plastic or cardboard (for fins)
- Heavy duty tape (to attach fins)
- Trash Bag (parachute)
- String
- Small Circular Stickers (attach string to chute)
- 3 small screws (nozzle stops)



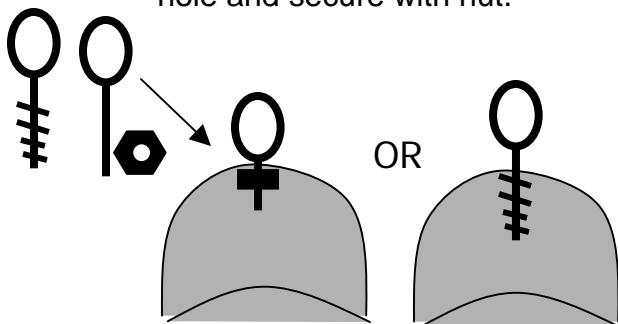
1 Start with two 2-Liter plastic Bottles and 1 top



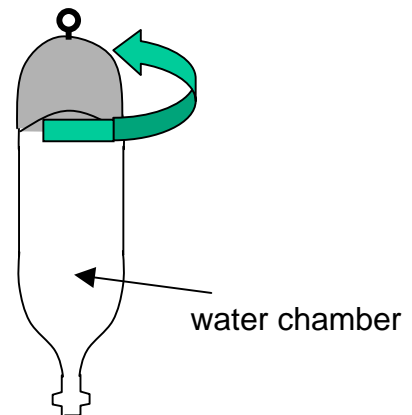
2 Cut one bottle into 3 equal parts (top becomes the rocket nozzle, bottom the parachute base and discard the middle)



3 Attach parachute anchor mount to parachute base: Drill hole thru bottom, Slip eye bolt thru hole and secure with nut.

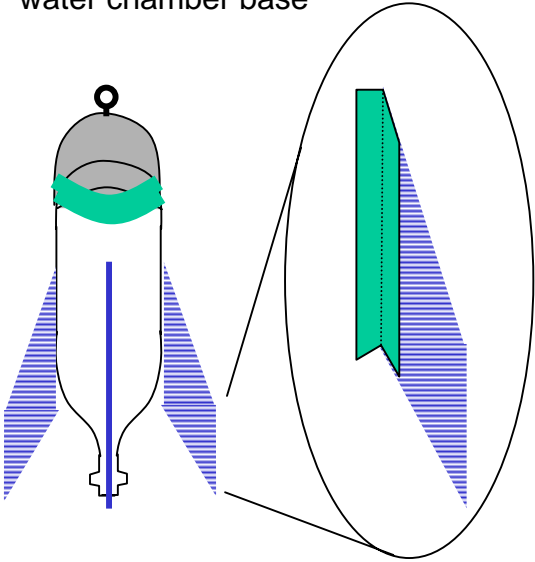


4 Using Clear Packing Tape, tape parachute base to rocket water chamber



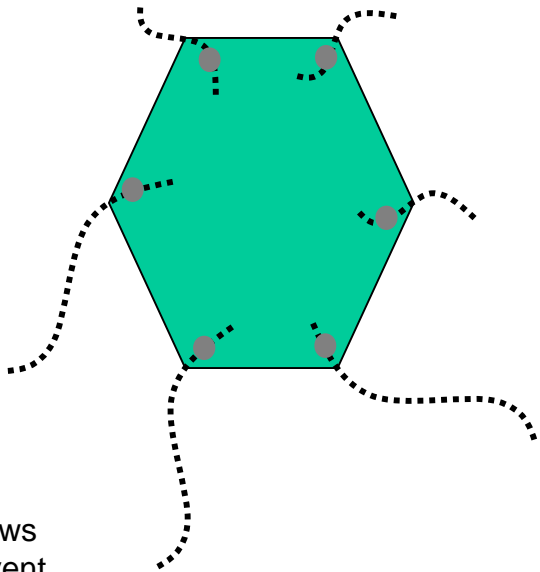
5

Attach the fins. Cut three or four fins out of thin plastic or cardboard (be creative with your design) and attach to rocket water chamber base



6

Build your parachute: (Create your own shape. A trash bag is excellent material, 1-2 ft diameter) Cut strings (approx. 18-24 inches long) for all corners and attach to chute with circle stickers. All leading ends will be tied to parachute anchor point.

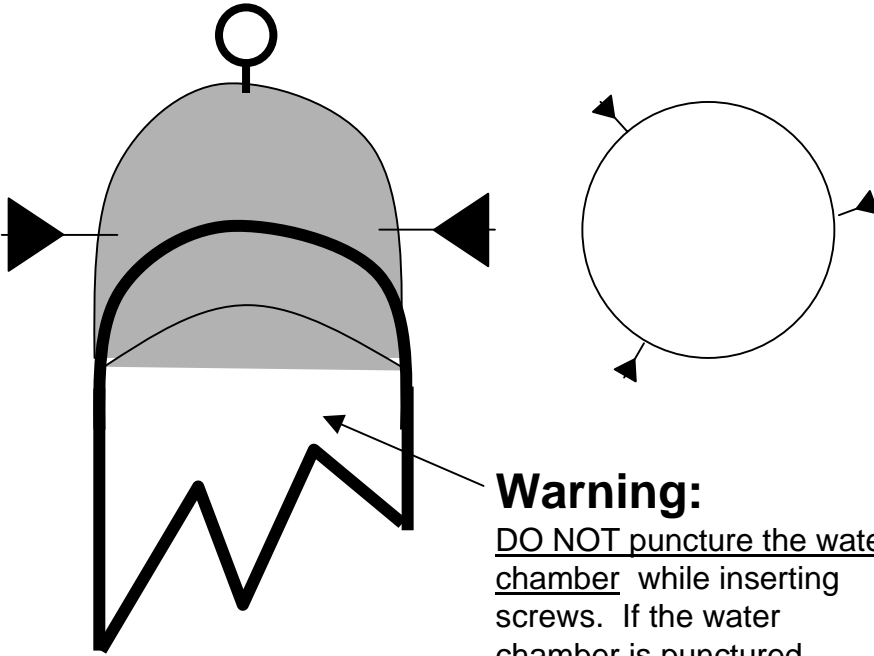


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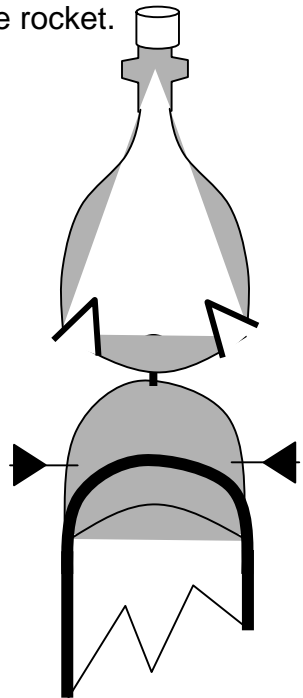
Connect the rocket nozzle. Screw three small screws into the parachute base to act as "stoppers" to prevent the nozzle from jamming into the rocket, which would prevent the chute from popping. Evenly space the screws around the circumference of the rocket.

8

Notch the nozzle. Cut small notches in the nozzle to accept each screw so that the rocket's nozzle is loosely sitting atop the rocket.



Warning:
DO NOT puncture the water chamber while inserting screws. If the water chamber is punctured the rocket will not maintain pressure, and never launch

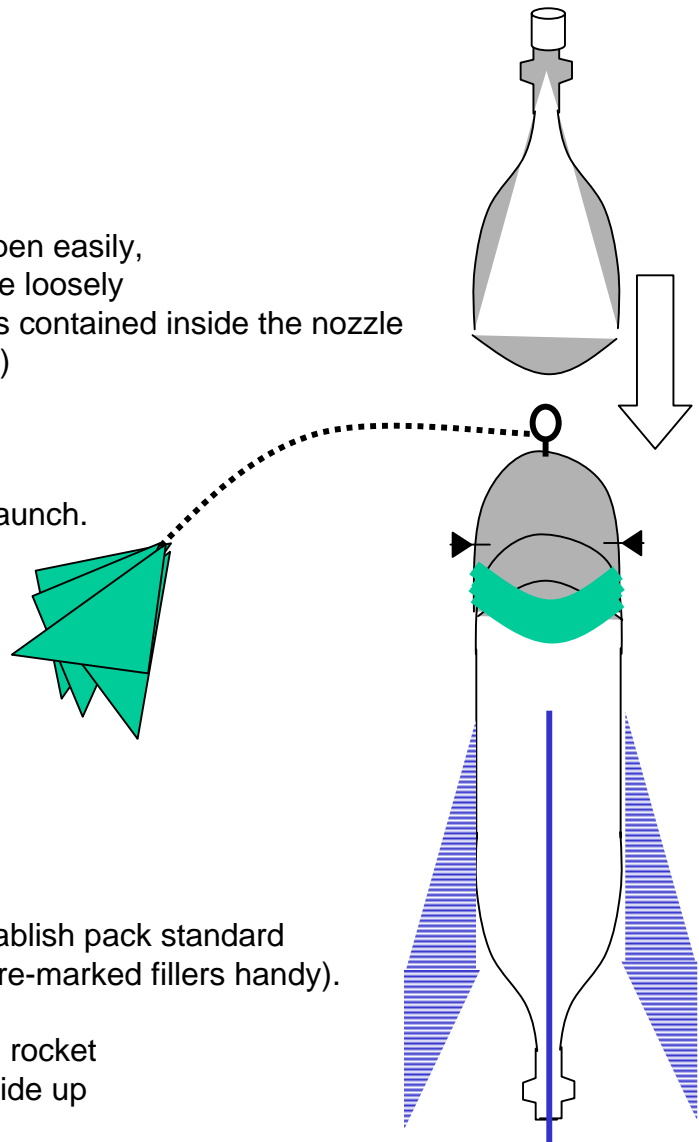


9

Final Assembly:

Fold the parachute so that it will open easily, slip the nozzle onto the rocket base loosely (ensure that the entire parachute is contained inside the nozzle as it slips onto the parachute base)

A small piece of masking tape could be used to keep the nozzle attached to the rocket body until launch.



Launch Procedures:

1. Hold to rocket upside down and fill the water chamber from 1/3 to 1/2 full (establish pack standard for the competition –measuring cups, or pre-marked fillers handy).
2. The launcher has to be attached to the rocket upside down, when the seal is tight right side up the rocket and launcher.
3. Remove any transport tape the may be used to hold the nozzle in place.
4. Attach the air pump to the launcher and allow the scout to press the button/flip the switch.

Competition (a dependable stopwatch is critical)

1. Each scout launches their rocket three times.
2. Flight time is calculated from launch to landing (catching a rocket - shortens flight time)
3. Division winners have the longest combined flight time (3 launches).
4. Divisions: Tiger, Wolf, Bear, Web 1, Web 2 and Siblings
5. Top two division finishers (excepts sibs) compete for Pack Championship.