

One Liter Bottle Rocket

Water Wars COMPETITION

Pack 200

Objective: Build a rocket out of a one liter bottle Work alone or with a partner.

Materials:

- a clean 1 liter bottle (no holes).
- bottle opening (between 2.0 cm and 2.5 cm) in diameter.
- neck of bottle (2.0 cm) long from lip of opening to raised ring.
- raised ring needs to be at least 0.3 cm wide.

Other materials

- wrapping paper tube, cone, package tape or duck tape, clay
- fins made of card stock, toilet paper tubes or other rigid material.

Procedure:

Rockets work best when stabilized by a heavy nose piece though too much weight can cut down on the distance the rocket travels.

(total mass should = 125g to 170g)

1. Attach a tube or other weighted mass securely to the bottom of the one liter bottle by whatever means. (hot glue, silicone, duct tape)
The assembly must be as straight as is humanly possible. Bent tubes or unbalanced weights will cause your rocket to fly crooked. Some people have been successful without tubes by using clay, washers or other material packed into the base of the bottle which is the cone of the rocket.
2. Sturdy fins made from cardstock, plastic or other material should be attached to the sides of the bottle to give the rocket stability in flight.
3. **Improve Aerodynamics** by making a cone from something rigid such as file folder, plastic, etc. Tape it to the tip or round off the nose in some other fashion.
4. **DO NOT PUT ANY HOLES IN THE BOTTLE.**

Competition:

1. Bottles will be filled with 250 ml of water and capped. Don't lose the cap.
2. Rockets will be pressurized to 50 psi.
3. Judging to be done by leaders.