ON-SITE WATER BOTTLE ROCKET
UC IRVINE CENTER
ELEMENTARY MESA DAY 2010

GRADE LEVEL: 3RD – 5TH GRADE
TYPE OF COMPETITION: TEAM (On-site)
COMPISITION OF TEAM: 1-3 STUDENTS
MAXIMUM NUMBER OF ENTRIES: 3 Teams per Advisor

OVERVIEW: To design and construct a model rocket powered by 90 psi of air pressure. The rocket that remains aloft for the longest time is the winner.

MATERIALS: One 2-liter soda bottle **Must be a Pepsi or Coca Cola product**
Cardboard, cardstock or manila folders
Any disposable cup for nose cone (i.e. plastic, paper, Styrofoam)
Tape of all kinds (i.e. masking, scotch, packaging tape, duct tape)

RULES OF CONSTRUCTION:
1. Rockets MUST be constructed from a standard, 2-liter soda bottle. Bottles will be provided by the center.
2. Rockets must be built entirely by the participating students. Advisors, parents or chaperones will not be allowed to interact with students during the construction of the rockets.
3. No part of the rocket, particularly the fins, may obstruct the mouth of the bottle. Mount the fins in a manner that keeps them at least 2” away from the mouth of the bottle.
4. No additional propellant devices are permitted. (Motors, Rocket Engines, Sky Rockets, etc.)

LAUNCHING GUIDELINES:
1. Water may be added to the rocket prior to launch. The amount is to be pre-determined by the student. Each team will submit a blueprint of their rocket in advance, which specifies the amount of water the students will add in addition to a complete list of materials that will be used in the construction of the rocket. Only air and water is permitted inside the bottles. Any other materials found inside the bottle will disqualify the rocket. There will be a point value assigned to the blueprint.
2. A member of the student team that built the rocket must launch the rocket.
3. All students must remain behind the caution tape during launch. Only the student that is launching the rocket is permitted within the launch area.
4. Rockets will fill with 90 psi of air. A brief countdown will follow. Students must remain clear of the launch area until the rocket hits the ground.
5. The next rocket for launch will not be loaded onto the launch pad until the prior rocket returns and hits the ground.
6. Each rocket will be officially launched only once. NOTE: ONLY in the event of a launcher malfunction or interference with the first launch will a second launch be allowed.

JUDGING:
1. Two judges will time the rocket’s flight from launch until it hits the ground. In order to increase accuracy, the average of the two times will be used as the official flight time.
2. The rocket with the longest flight will be the winner.
3. Any rocket may be disqualified from launch if, in the opinion of the judges, launching it poses a hazard to spectators.