

APRSAF-19 Water Rocket Event – Rules for Launch Competition

1. APRSAF-19 Water Rocket Launch Competition will be held at SMK Putrajaya Presint 18(1), Putrajaya, Malaysia on Sunday 9th December 2012. All competitors will make their water rockets at the same location.



Figure 1: SMK Putrajaya Presint 18(1), Putrajaya, Malaysia.
(GPS coordinates: latitude 2.92246, longitude 101.694496)

2. All materials to make and launch water rockets, including launcher and hand pump (see Figure 3 in page 2), will be provided by the organizer. Pre-made materials or launchers brought in by participants will not be allowed for the competition.
3. Each competitor should make two (2) rockets. Each student will receive:
 - a. Six (6) 1.5 litre PET bottles
 - b. Plastic sheets (see Figure 2 below)
 - c. Card
 - d. Tape
 - e. Scissors
 - f. Penknife
 - g. Ruler
 - h. Plasticine



Figure 2: Students will receive three different types of plastic sheets for their water rocket making. (all in A4 size, 210 x 297 mm)



Figure 3: Launcher and hand pump.

4. The competitors are encouraged to be creative in the design of the nose cones and fins of their water rockets.
5. The launch aims at precision flight of the rocket. A target will be placed with the centre 80m from the launcher (see Figure 4 below).

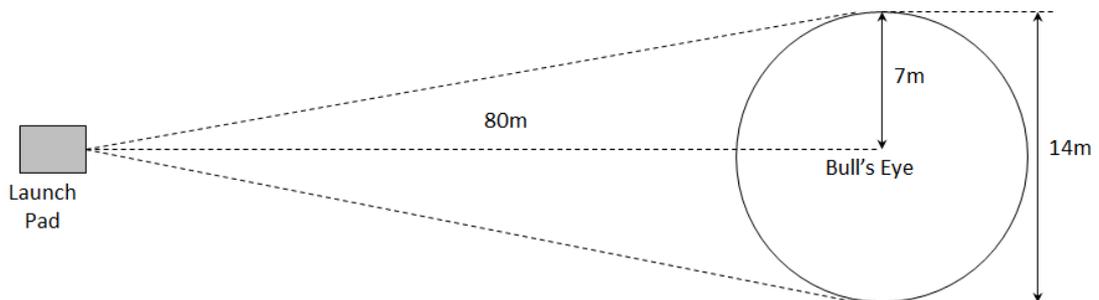


Figure 4: Water rocket launch and target site setup plan.

6. The distance will be measured from the centre of target to the point of impact. The rocket that lands closest to the target centre get the best score.
7. At the time of launch, each competitor may adjust the volume of water, air pressure, launch angle and launch direction. There is no limit on water volume but air pressure must not exceed 80 psi (5.516 bar).

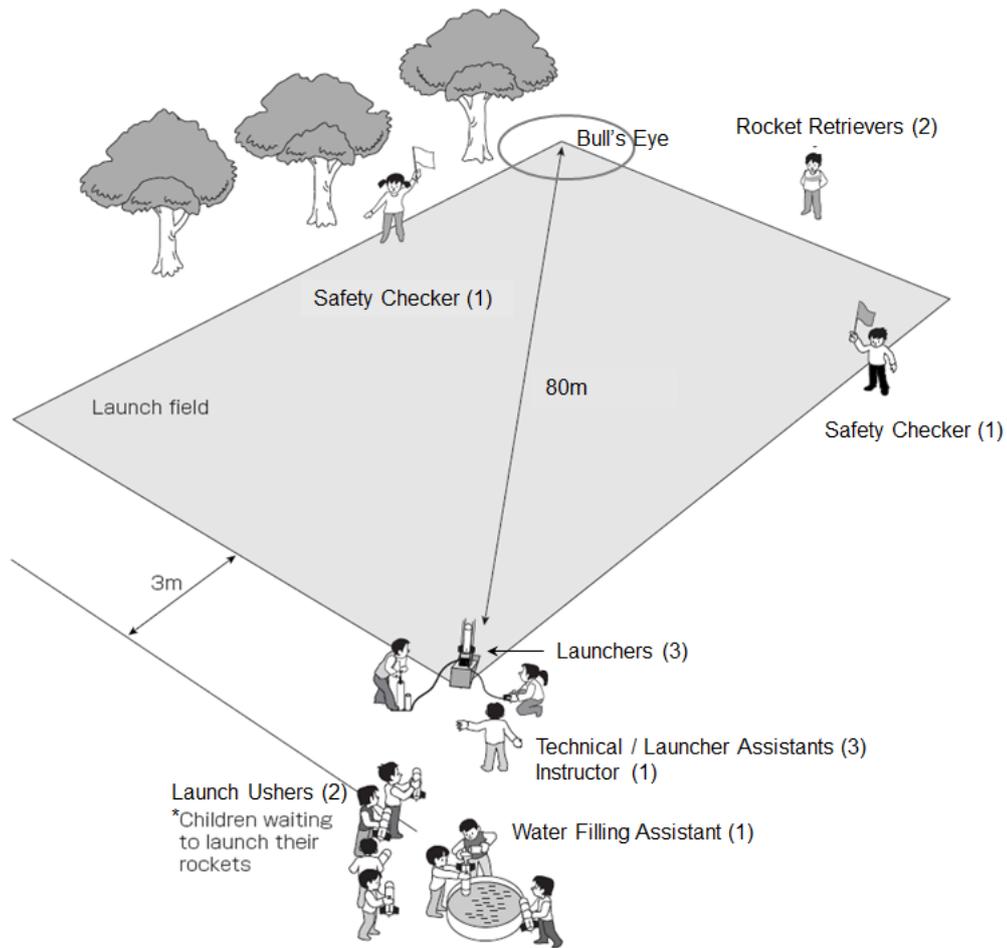


Figure 5: Water rocket launch site setup plan.

8. Each competitor will be given an opportunity to conduct a few test launches prior to the competition.
9. During the competition, each competitor will be given opportunities to conduct two (2) launches. Exact distance from the point of impact and the centre of target will be measured. The result of the best launch will be recorded.
10. There will be three (3) launchers, and the competitor will launch one (1) rocket at a time. The other 2 competitors can prepare their rockets and wait for their turns. The organizer will provide the launchers for the competitors for each of their launches.
11. In order to reduce the possibility of error. The competitors will draw lots of their launching sequence and assigned with the respective launchers. In this way, they can practice with the assigned launchers during the trial launching.
12. The competitor who achieves the best score, i.e. the best score of the 2 launches as stated in item 9, will be declared the winner of the Launch Competition.
13. In case of a draw, the second launch will be taken into consideration to determine the winner between the competitors.