

# APRSAF-18 Water Rocket Event – Rules for Launch Competition

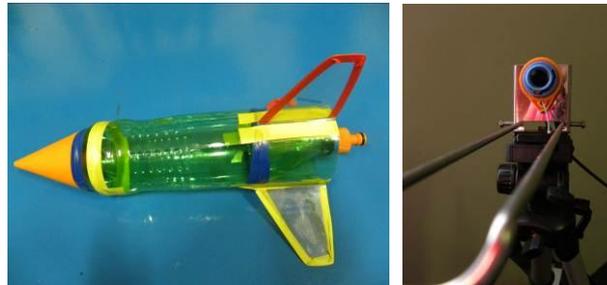
(Version 1.2 – Updated 10 July 2011 – SpeedB Pte Ltd Singapore)

1. APRSAF-18 Water Rocket Launch Competition will be held at Saints Hilda's Secondary School (tentative), on Sunday 4th December 2011.
2. All competitors will make their water rockets at the same location.
3. All materials to make and launch water rockets, launcher and hand pump will be provided by SpeedB. Pre-made materials brought in by participants will not be allowed.



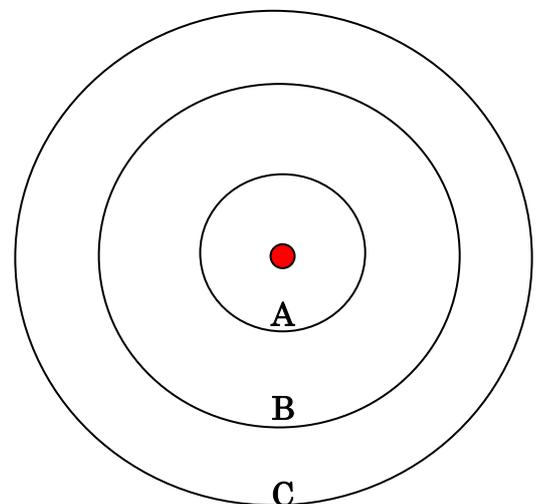
4. Each competitor should make two (2) rockets. Each student will receive:
  - a. Six (6) 1.5 litre PET bottles
  - b. Plastic sheet
  - c. Card
  - d. Tape
  - e. Scissors
  - f. Penknife
  - g. Ruler
  - h. Orange nose cone
5. The competitors are encouraged to be creative in the design of the fins of their water rockets. **No nose weight (eg. plasticine) is given, but nose cones are given.** Demonstration launches for students will be on 3<sup>rd</sup> Dec 2011.

6. Each competitor will be given two (2) nose cones and two (2) nozzles as shown. Each competitor is responsible for their nozzle and can keep it at the end of the competition. Additional nozzles will be available for sale.



7. The launch aims at precision flight of the rocket. A target will be placed with the centre 60m from the launcher.
8. The distance will be measured from the centre to the point of impact. The rocket that lands closest to the target centre gets the best score (See diagram below).
9. At the time of launch, each competitor may adjust the volume of water, air pressure, launch angle and launch direction. Launch angle can be measured using the iPads with “Clinometer” app which will be made available at the launching point (provided by the organizer). There is no limit on water volume but air pressure must not exceed 75psi (5 bar).
10. Each competitor will be given an opportunity to conduct a few test launches prior to the competition.

Accuracy testing: Zone A : 100 points (within 2m)  
Zone B : 80 points (within 6m)  
Zone C : 50 points (within 12m)



11. During the competition, each competitor will be given opportunities to conduct two (2) launches. The result of both launches will be added together. Exact distance from the point of impact and the centre of target will be measured for rockets landing in Zone A and B.
12. 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.
13. The competitor who achieves the highest score, i.e. closest to the centre of the target, after two (2) launches will be declared the winner of the Launch Competition.
14. If more than one (1) competitor achieves the top score, the exact total distance of the both launches will be assessed to declare the winner.