

## **WATER ROCKET RULE BOOK**

The team must consist of minimum 3 member.

Design and build a water rocket within the specified dimensions robust enough to withstand the pressure and when launched from the launch pad achieves the maximum altitude above ground level. The team with maximum airtime will be nominated as the winner.

The team must design their own water rocket and launch pads with safety. Commercial water rocket kits and launch pads won't be allowed. Following specifications and rules address many well-known safety issues of water rockets but are not expected to cover all design possibilities.

### **Rocket Material:**

- The weight of empty rocket with empty fuel tank must not exceed 0.5 kg (11 Pounds)
- The maximum allowed total height of the rocket is 76.0 cm.
- The rocket shall be made of low-density materials such as paper, plastic, duct tape, and glue. Use of Metal, ceramics, and other high-density materials are prohibited.

### **Rocket Nose Shape**

- While a sharper nose improves aerodynamics and accuracy, for safety the nose must be somewhat rounded and made of a soft, flexible material. The nose must not form a sharp, hard point. It should not break a windshield or injure anyone.

### **Fuel Tank**

- The water-fuel tank must be a plastic soda-bottle, not a water bottle, with a maximum size of 2.5 litre. A soda bottle makes an ideal fuel tank for a water rocket; the bottle should be strong, lightweight, and designed to be pressurized.
- The rocket fuel must be water, driven by pressurized air to produce thrust. Water and air are non-toxic and non-combustible, and readily available. Air pressure must not exceed 70 psi, roughly 1/2 of the burst pressure of soda-bottles.

### **Launch Pad**

- The Launch pad must be of sufficiently sturdy construction to ensure a repeatable, predictable launch direction. The pad may optionally include a blast shield that disperses the rocket exhaust, a high velocity column of water, into a harmless spray, to protect participants and spectators and to prevent mud splatter from the dirt surface of the infield.

- The Field area of the water rocket tournament would be 40 meters X 40 meters (approx.). A fixed spot for the launching pad will be marked on the competition field. The penalty area is marked by white lines. Rocket is considered to have made a penalty if it falls outside the defined area.
- Prior to the start of a Competition, launch pad and rockets should be made available in designated area.
- Each team will get three chance to launch the rocket and achieve the maximum Airtime.
- Referee will record the Airtime of the rocket for each attempt, maximum Airtime will be chosen from all the attempt and will be declared as the official Airtime of the rocket.
- Rocket with the maximum Airtime will be nominated as the winner.

**PARTICIPANTS CAN USE THEIR INNOVATIVE IDEAS FOR GAINING MAXIMUM AIRTIME WITHIN THE SPECIFIED RULES.**