# Water Rocket Challenge

## Introduction:

The aim is to launch a rocket powered by water/air pressure and land it in designated target zones, whilst trying to earn additional bonus points by time of flight. The competition area has is a special place defined for the rocket's operation.

**Team specification**
Teams of maximum 3 members each

**Rules:**
1)All energy given to the rocket must only come from the water/air pressure combination. No other source of energy is allowed. You can only compress air manually, with a foot or bicycle pump.
2)No external metal parts are allowed on the rocket, but are allowed on the launch mechanism.
3)You are only allowed to use plastic bottles specifically designed for holding pressure, or that have been pressure tested (for example carbonated drink bottles).
4)Particular care must be taken so that the rocket's launch direction is not changed when the launch mechanism is released. This means, that handheld launches, systems requiring human support, or launches guided by flexible wire rods will not be allowed.
5)You will need a launcher capable of launching a rocket at a variable vertical angle of up to 60˚ to the horizontal. You can launch at angles less than the maximum if you wish.
6)If your rocket has fixed wings then a maximum variable launch angle of 30˚ to the horizontal is allowed.
7) There are optical sensors that detect the rocket's start and stop movement. When the rocket take off from the launcher, the timer automatically starts to count the hang time. As the robot reaches earth, the timer automatically stops and the recorded time value is saved.