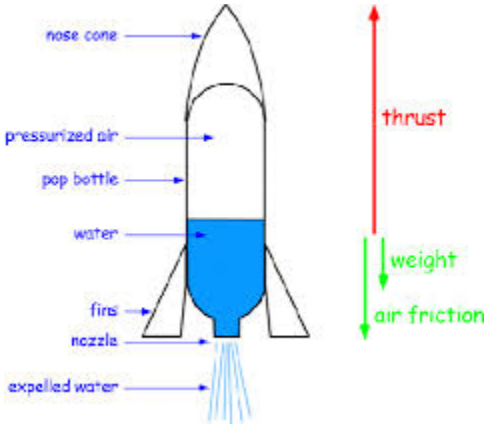
# ACTION-REACTION




## ABOUT

Action-Reaction is the water rocket events where you have the chance to show case your rocketry skills and your practical talent against the best colleges of India.

Experience the fun in true engineering while working with rocket propulsion and aerodynamics. One of the most fun events, it will surely leave you missing it once it's over.

The purpose here is to design and manufacture a water rocket .A water rocket is a type of model rocket using water as its reaction mass. The pressure vessel –the engine of the rocket-is usually a used plastic soft drink bottle. The water is forced out by a pressurized gas; typically compressed air .It is an example of Newton's third law of motion.

**ELIGIBILITY CRITERIA: - All Engineering students are eligible.**

**Details:-**

## PROBLEM STATEMENT:

Design and construct a water propelled rocket pressurized with air to compete against different constraints in separate rounds.

## ROUND1:

1.The objective of the preliminary round is to launch a water-rocket and make it go as far as possible from the launch the launch point i. e, the maximum the horizontal distance.

2.The horizontal distance will be considered from the starting point to the point where any part of the rocket first touches the ground. Negative score for deviation from limit of track path.

3.Multi stage rockets are also allowed but the combined tank capacity must be 2 litres only.

4.Each team shall be allowed two chances to launch and the better of the two will be considered.

5.Only 40 percent of candidates are allowed for 2nd round.

## Round2

1.The objective of 2nd round is the teams whose rocket will remain in air for maximum time will win the Action-Reaction.

2.The participant can even launch the rocket vertically or at any inclination.

## Rules and Regulations:

1. The rocket tank capacity should be 2 litres and material of rocket tank is plastic soft cool drinks bottle.

2.Teams may use different rockets for different rounds.

3.Any type of modelings to the bottle are allowed.(e.g,attachment of fins etc.) but the total weight of empty bottle rocket model should not exceed 250 gms.

4.The rocket must use tap water as its primary reaction mass. Thrust must come from expelling reaction mass/water, not from air discharge.

5.The angle at which the rocket is to be launched can be decided by the participant.

6.The organizers will provide required pumps and water but teams must bring their own launchers.

7.The rocket must use compressed air as its energy source with the help of hand pumps as well as foot pumps.

8.If your design has a different nozzle size,please be sure to bring your own nozzle and connecting pipe.

9.All parts of the rockets should be properly attached to the main body.If any part(fins etc,)breaks away during flight,it will compromise the safety of the spectators.Therefore,such water rockets may be disqualified from further participation at the discretion of the organizers.

10.Each team is strongly advise to bring two rockets of the same design (the second acting as a backup)in case of any damage.The organizers will not be responsible for damage suffered by rockets during the completion.Extra time shall not be given for remaking of damaged rockets.

## VENUE

Workshop Lab complex Ground

## Organizers

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