

JUNK BOX WARS

Rocket Rally

Create an air-powered rocket that will travel the greatest distance.

Competition Rules:

Your team will be provided with a junk box filled with materials that could be used to create your rocket or flying device. Each team will receive only one set of materials. Teams may use all or part of the materials in the junk box and are not allowed to share materials with other teams. All unused materials should be saved in case repairs are needed during competition.

Teams will be allowed time to build and test their device. Each team will be allowed three practice flights during the construction time. Competitors are allowed to bring diagrams to help during the building time. After the time is up, the device will be impounded and no changes will be allowed.

Junk Box Possible Supplies

Plastic bottles
Straws
Spools
Film canisters
Rubber bands
Plastic cups
Masking tape
Glue
Wooden craft sticks
Pipe cleaners
Tissue Paper
Toilet paper rolls

Machine Requirements:

Your rocket must be powered by the air pump and may not be aided by a helping hand or other energy source. You may not use your hands to guide it. The rocket must be able to sit unaided on the launching platform or device.

Testing Procedure:

Each team will be allowed 5 minutes to prepare their rocket for take-off. Each team will be allowed three trials with 5 minutes allowed between trials for repairs and adjustments using materials left over from construction.

If the flying device does not leave the launching device for any reason, no points will be awarded for that trial. The team with the best distance will be declared the winner. In the case of a tie, the teams involved will be allowed one additional trial. The team with the greatest distance on the tie breaker will be declared the winner.





Rocket Rally

Team Name: _____

Team Members : _____

Trial 1: _____

Trial 2: _____

Trial 3: _____

Tie Breaker = _____

Final Score = _____



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Final Score = _____



Rocket Rally Teacher Notes

Recommended Supply List

2 Plastic Water Bottles	10 Pipe cleaners
6 Spools	Hot glue gun with 5 sticks of glue
10 Straws	2 Sheets of tissue paper
6 Film canisters	20 Sheets of standard paper
10 wooden craft sticks	3 plastic cups
5 Rubber bands	200 cm of string
2 Yogurt Containers	
100 cm of Masking tape	
5 Toilet paper rolls (or 2 paper towel rolls)	

Teacher Notes:

(1) Students may use all or part of the materials in the junk box. I allow the students to use any material inside the box. For example, if any of the materials come in wrappers or boxes, teams may use those for the device. The materials may be modified with the understanding that if a goof is made they will not receive new materials. Leftover materials may be used to make repairs if the device breaks during competition. No major design changes are allowed!

(2) Students may build a variety of rockets or flying devices as long as they are able to be launched using the air-powered launcher provided. Students should have access to the launcher during construction to ensure the device will be able to fit the launching tube.

(3) You will need to mark off the launch area with string or masking tape. If you choose to measure using exact distances, designate a point of launch to measure the distance for each flight.

(4) A variety of air-powered launching devices are available in stores or you can build your own. Visit these websites with directions or more details about buying launchers:

Build Your Own Stomp Rocket - <http://www.funology.com/boredombusters/bb142.cfm>

Stomp Rocket - <http://www.stomprocket.com/>

Poof Toys - <http://www.poof-toys.com/toys/>

NOTE: These sites are provided only to show you a few options for launchers that have been used for Junk Box Wars competitions. We do not endorse any specific company.

Safety First - Students should wear safety goggles during the launch!