

Rockets Away

The Rockets Away educational program teaches about the science of rocketry through the use of hands-on experiments, computer software and the building and launching of 2-litre bottle rockets.

Design Zone Instructions:

If your computer fails to load the interactive movie (see image below), you will need to download and install the [Flash plug-in](#) for your browser.

1. Click the "Yes" button to begin.
2. Supply values for your demo rocket and click the "Build Rocket" button.
3. Click the "Launch" button to see how high your rocket will travel.

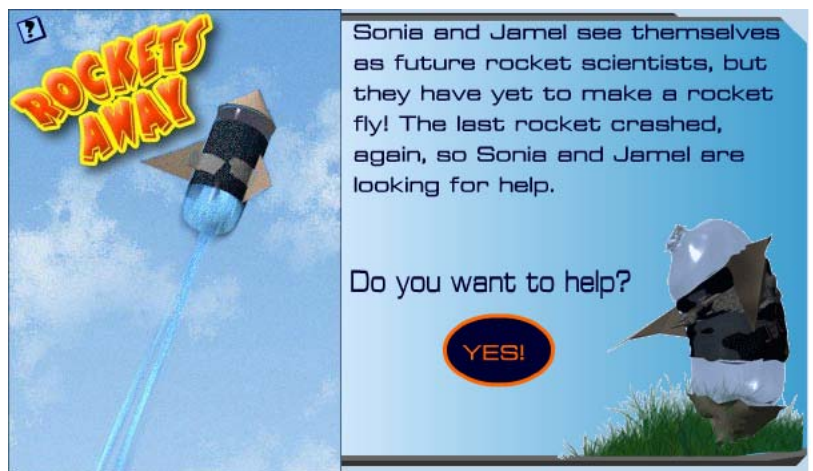
To reset your parameters and try again, click the "Change Rocket" button.

A brief overview of the parameters in the Demo are listed here to help you get the best performance out of your rocket...

Cone Weight (.3 - 15 .oz)

Australian measure 8.5g – 425g

When properly weighted, the rocket's nose section will actually pull the rest of the rocket behind it. However, too much weight will slow its performance, just as too little weight will cause the rocket to spin around its center of gravity. Valid cone weight ranges are .3 - 15 ounces.



Body Weight (.8 - 15 .oz) Australian measure 22.7g – 425g

Tail Weight (.8 - 15 .oz) Australian measure 22.7g – 425g

Less is better for the body and tail weights. However, this program requires you to add a few ounces of weight to account for the bottle's body and tail sections, along with any materials you might add to each section like fins and tape. Valid body and tail weight ranges are .8 - 15.0 ounces.

Water (0 to 64 .oz) Australian measure 23.7ml – 446.6ml

Pressure (1 - 140 psi) Australian measure 6.89Kpa – 965Kpa

To make your rocket fly you could simply pressurize and launch it much like a balloon filled with air. However, to improve your rocket's performance, try adding varying amounts of water and air pressure. Remember, your rocket is an action/reaction machine. The greater the mass of water you push in one direction, the greater the push will be on the rocket. But remember, your space is limited to 2-liters. If you use too much of this space for water, you won't have enough space for the air to push it out. Valid amounts of water are between 0 - 64 ounces. Valid amounts of air are between 1 to 140 p.s.i.

Source: 4-H Rockets Away web site (a youth section of Ohio State University, USA)