

Background Information:

Newton's Laws of Motion

Bottle rockets are excellent devices for investigating "**Newton's Three Laws of Motion**":

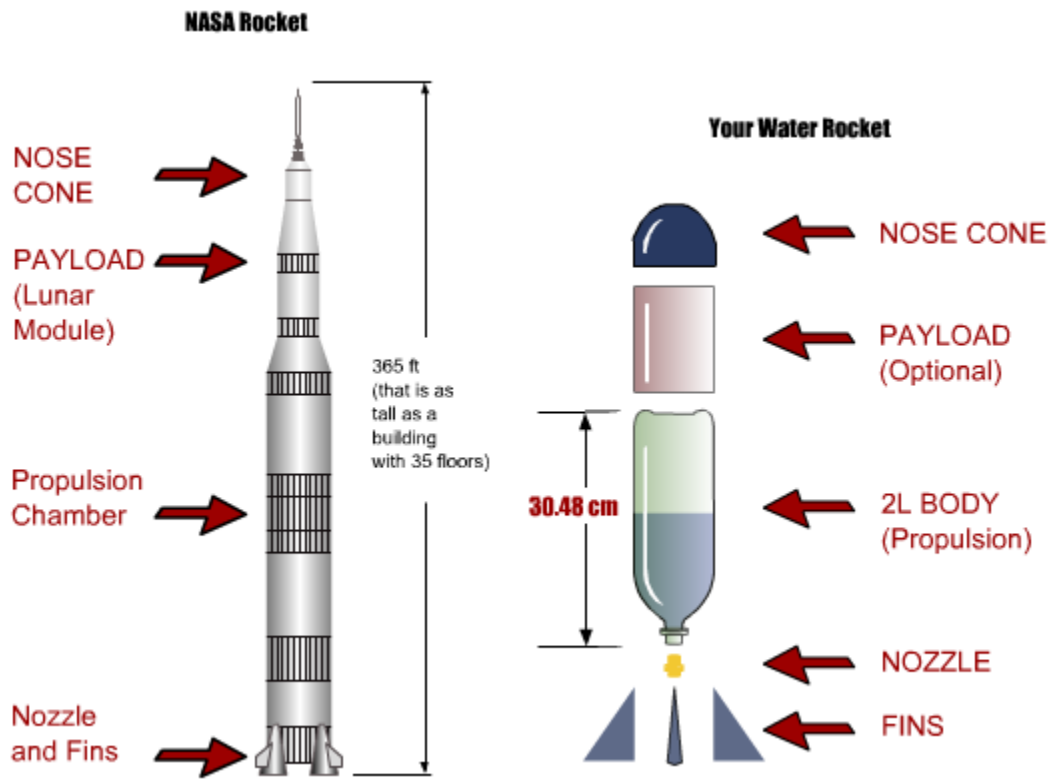
1st Law - A rocket will remain on the launch pad until an unbalanced force is exerted, propelling the rocket upward.

2nd Law - The amount of force depends upon how much air is pumped inside the rocket. You can increase the force further by adding a small amount of water, which increases the mass expelled by the air pressure in the rocket .

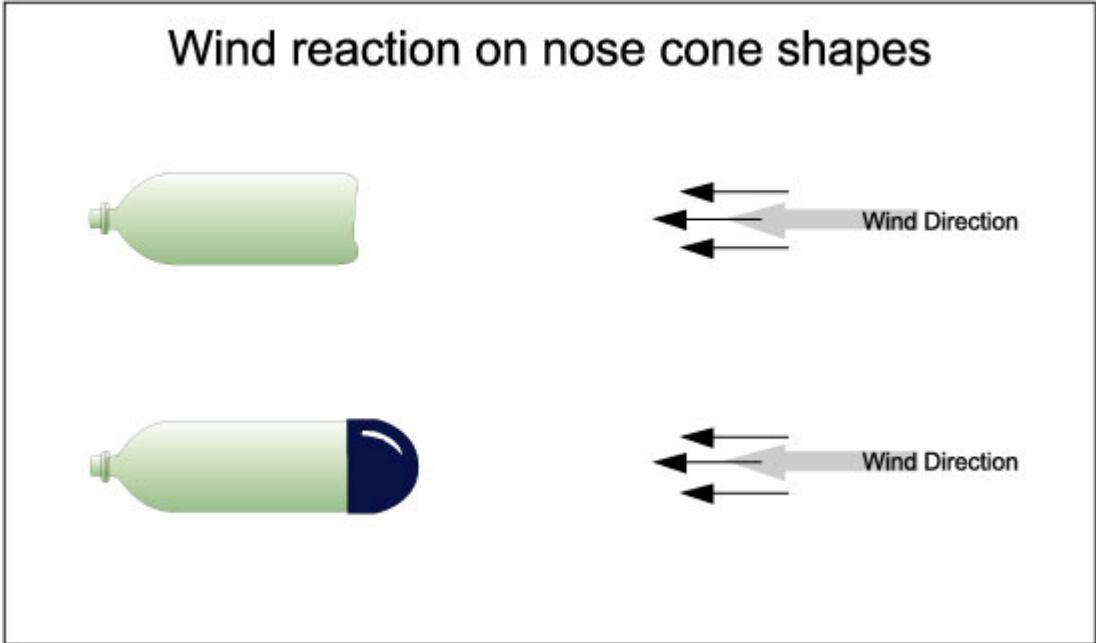
3rd Law - Finally, the action force of the air (and water) as it rushes out of the nozzle creates an equal and opposite reaction force propelling the rocket upward.






As with a balloon, air pressurizes the bottle rocket. Adding a small amount of water to the bottle increases the action force. The water expels from the bottle before the air does, turning the bottle rocket into a bigger version of a water rocket toy (available in toy stores).

Parts of a Rocket



Aerodynamics and Nose Cones



Fin Style	Number of Fins	Size/Altitude
		1.
		2.
		1.
		2.
		1.
		2.
		1.
		2.
		1.
		2.
Other fin style		1.
		2.



Flight of a Model Rocket

