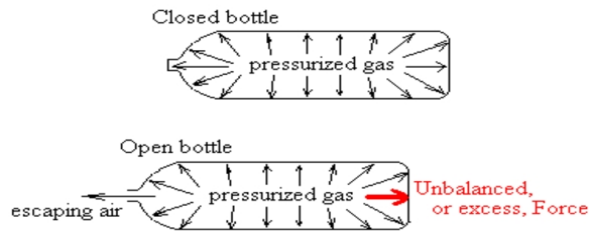


**STUDENT WORKSHEET: Force and Acceleration**

In rockets, the hot gases in the combustion chamber press against all sides equally. Water bottle rockets work the same way. The water bottle acts as the combustion chamber of the rocket.

When the bottle is opened, the pressure on the opposite side of the combustion chamber is now unbalanced and pushes the rocket



Force = Mass x Acceleration  
 Or,  
 Acceleration = Force ÷ Mass

Example:

A rocket engine provides 28,913 Newtons of thrust. The rocket has a mass of 2,350 kilograms. Calculate its acceleration if it moves **HORIZONTALLY** (we don't want to fight gravity yet) on some frictionless surface.



Solution:

State the Unknown:

State the Givens:

State the Equation you plan to use:

Plug in values with units of measure:

State your answer:

That means that every second the rocket's speed increases by \_\_\_\_\_.