

12.2: Introduction

There are several factors that determine how well a rocket will fly. Thrust propels a rocket upward with a net force that is greater than the downward forces on the rocket. As the rocket velocity increases, it encounters increasing air resistance, or aerodynamic drag, which opposes the motion of the rocket. Air resistance, or drag, increases as the square of the velocity. In rocket design, it is important to minimize air resistance. Gravity works in opposition to upward motion, slowing the rocket and eventually causing the rocket to fall toward the Earth. Every gram of mass requires fuel to propel the rocket away from Earth.

Equation for Weight:

$$W = mg$$

Basic Bottle Rocket

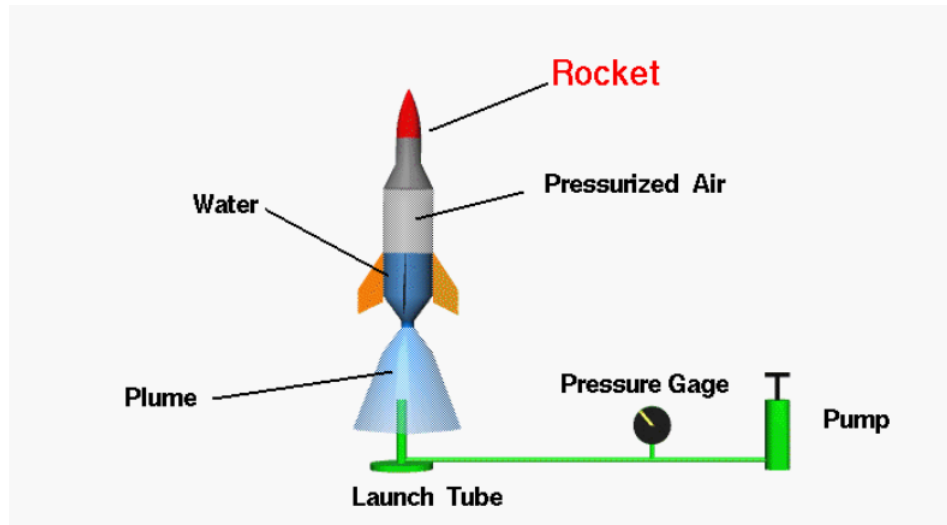


Figure 12.2.1: [Water Rocket](#) by [NASA](#) is in the public domain

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