



Bottle Rockets - an Overview



Vocabulary Terms:

- Rocket – a device that is shot through the air which usually carries some payload
- Payload – the cargo (scientific instruments, satellites, spacecraft, etc.) carried by a rocket
- Nose Cone – the cone-shaped front end of a rocket
- Fins – arrow-like wings usually located at the lower end of a rocket that stabilize the rocket in flight
- Canards – small movable fins located towards the nose cone of a rocket
- Propulsion – a force that pushes or drives forward
- Thrust – the forward force produced by the gases forced from a rocket
- Aerodynamics – the study of the interaction between air and moving objects
- Mass – the amount of matter contained within an object
- Center of Mass (CM) – the point on an object where it balances relative to gravity
This is the point on a rocket where all gravitational forces are assumed to act.
- Pressure – the force pressing against a surface, stated in weight per unit of area
- PSI – pounds per square inch; a measurement of pressure (weight per unit of area where weight is measured in the unit of pounds)
- Center of Pressure (CP) – the center of aerodynamic pressure; the point on an object where the surface area on one side equals the surface area on the other side (simplistic definition)
This is the place that is the center of all aerodynamic forces on a moving body.
- Force – a push or a pull
- Gravity – force that pulls objects towards the earth
- Friction – the force that resists motion between two objects in contact
- Inertia – the natural force in matter that makes it stay at rest or keep on moving in a fixed direction unless it is acted on by an outside force
- Action – a force (push or pull) acting on an object
- Reaction – resistance or opposition to a force or movement
- Sir Isaac Newton – (1642-1727) English mathematician
- Newton's First Law of Motion – An object at rest will tend to stay at rest, and an object in motion will remain in motion unless acted upon by an outside force.
- Newton's Third Law of Motion – For every action, there is an equal and opposite reaction.
- Drag (pertaining to rockets) – resistance between air and the surface of the moving rocket
- Stage – an independently powered section of a rocket, separates when no longer needed