

Lesson Topic: Bottle Rocket

Essential Question
 (to guide your note-taking)

How does a bottle rocket work?

Main Ideas/ Sample Test Questions
 Newton's Laws of Motion

1. "Every object persists in its state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed on it."
2. "Force is equal to the change in momentum (mV) per change in time. For a constant mass, force equals mass times acceleration" $F = m a$
3. "For every action, there is an equal and opposite re-action."

Second law- associated with the change in momentum

Third law- Explains the generation of thrust by a rocket engine

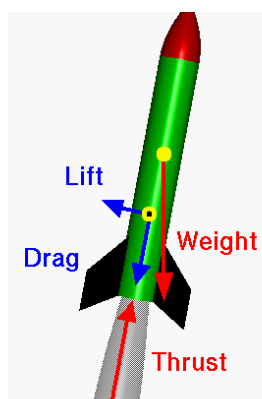
Forces

Thrust- used in

Lift- used to stabilize

Weight- overcome

Drag- usually much



opposition to weight

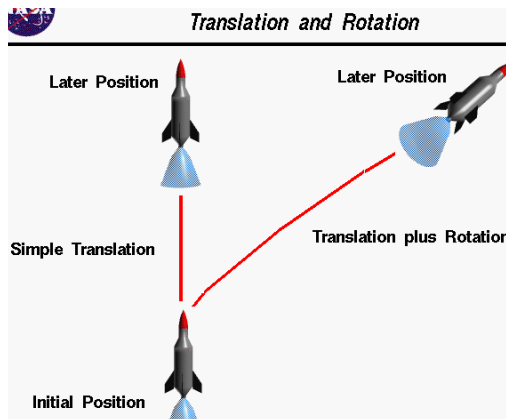
and control the direction of flight

by lift force

greater than the lift

Rocket Flight

An object attitude. In any object and rotation. direct response rotations are in external (twisting



rotates, or changes its general, the motion of involves both translation The translations are in to external forces. The direct response to torques or moments forces).

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| Summary | |
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