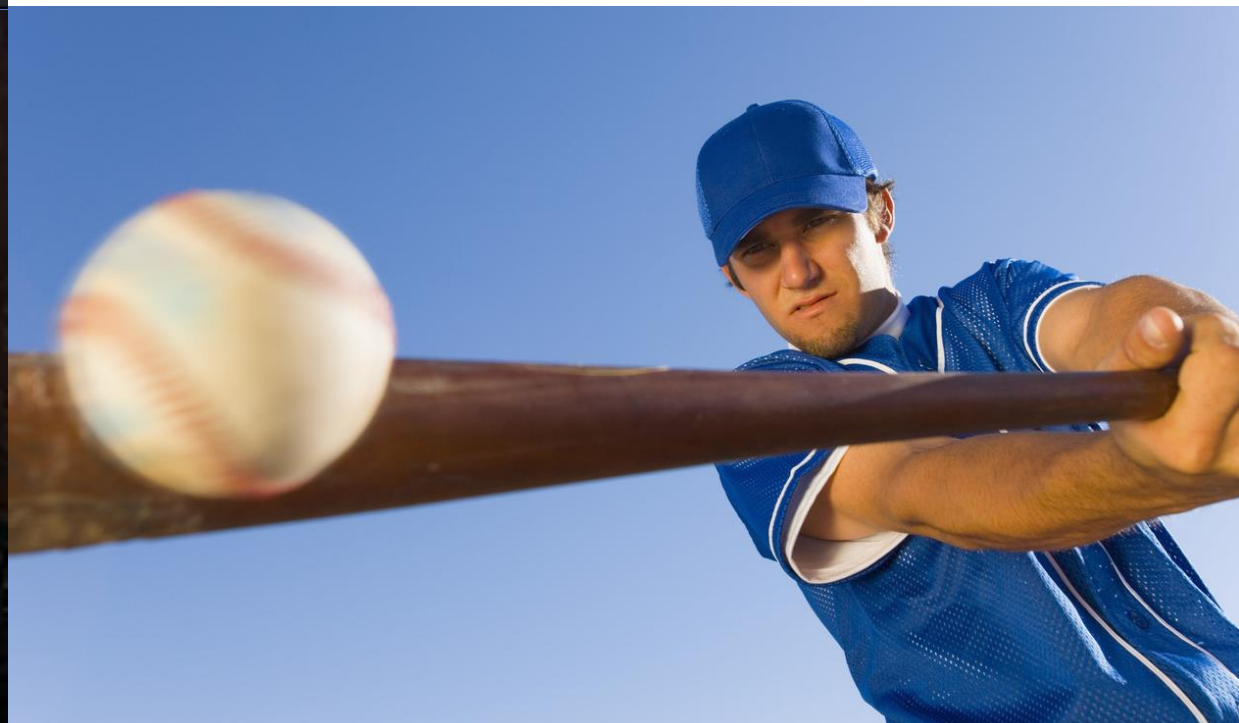
Forces and Newton's Third Law



Newton's Third Law of Motion

For every action, there is an equal and opposite reaction.

Hero's Engine DEMO

Newton's Third Law of Motion

For every action, there is an *equal and opposite* reaction.

The block's weight pushes on the ground

The ground pushes back on the block

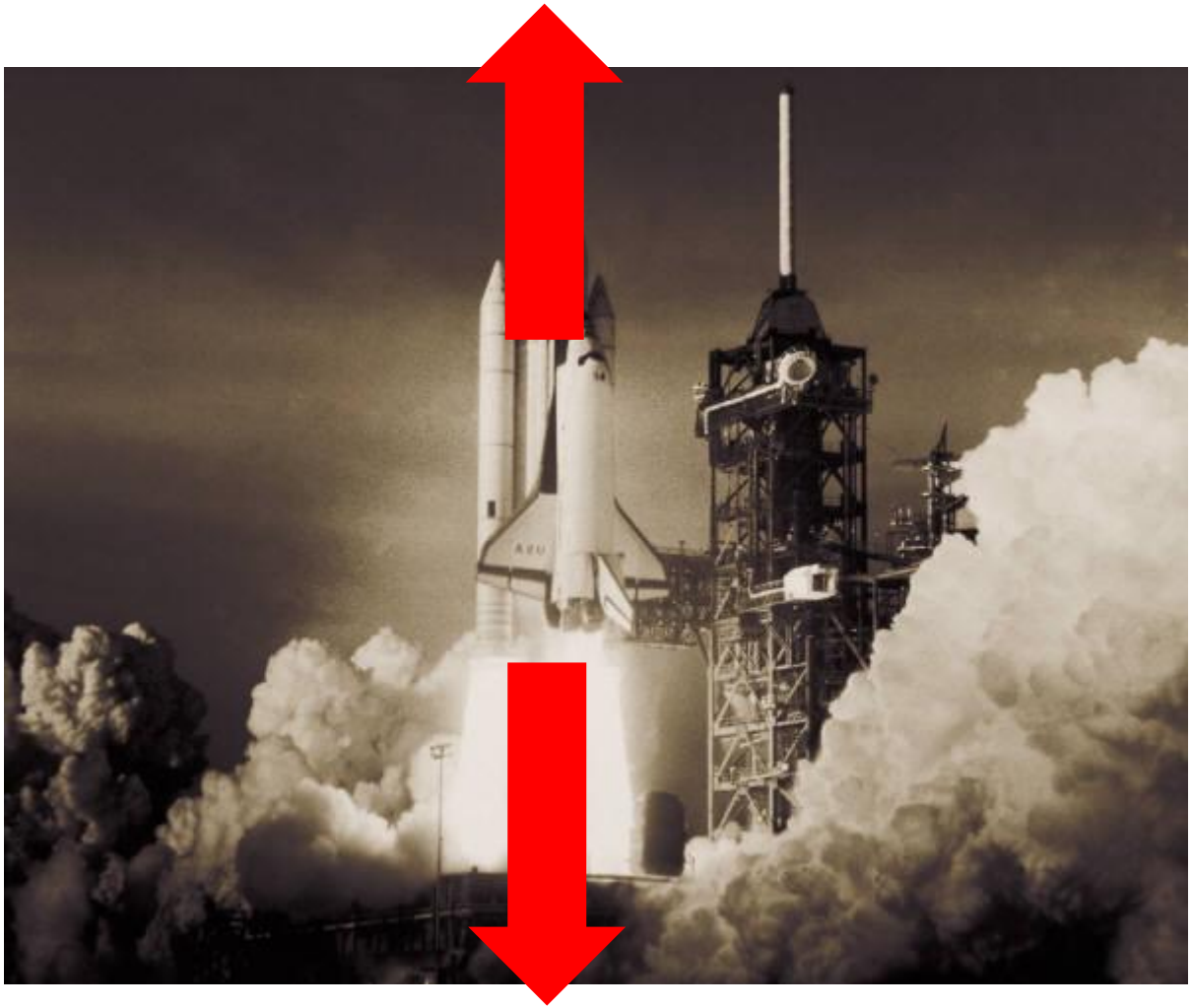
Examples of Newton's Third Law

Identify several action-reaction force pairs in the photograph.

The cannon exerts a force on the cannon ball, and the cannon ball exerts an equal and opposite force on the cannon.

Examples of Newton's Third Law

Identify several action-reaction force pairs in the photograph.



The space shuttle exerts a force downward, and the reaction force pushes it upward.

Examples of Newton's Third Law

Identify several action-reaction force pairs in the photograph.

Concept Review

1. _____Inertia_____ is an object's resistance to changing its motion.
2. Applying an unbalanced _____force_____ to an object causes it to _____accelerate_____.
3. Based on Newton's first law, if no forces are acting on an object, its _____velocity_____ will not change.
4. From Newton's second law, an object's acceleration depends on the object's _____mass_____ and the strength of the _____unbalanced_____ _____force_____ acting on it.
5. Newton's third law: For every action there is _____an equal and opposite reaction_____.