
Chapters 6 & 7: Newton's 3rd Law & Momentum

Text:Chapter 6

Think and Explain: 1-15

Think and Solve: ---

Chapter 7

Think and Explain: 1-9

Think and Solve: 1-6

Vocabulary:

Newton's 3rd law, action force, reaction force, momentum, vector, impulse, change in momentum, law of conservation of momentum, recoil, elastic collision, inelastic collision

Equations:

$$p = mv \qquad J = Ft \qquad \Delta p = p_f - p_i$$

Key Objectives:*Concepts*

- State Newton's 3rd law and identify action/reaction pairs.
- State why action/reaction forces never cancel.
- Define momentum and state the units of momentum.
- Recognize the affect of force and time on change in momentum (impulse). (Egg Drop Activity)
- Describe situations where it is beneficial to have a large force and a small time and vice versa.
- Relate bouncing to impulse.
- Understand conservation of momentum and distinguish between the different types of conservation of momentum problems: recoil, inelastic, elastic.
- Recognize action/reaction forces in collisions.

Problem Solving

- Calculate momentum when given mass and velocity.
- Determine the change in momentum using mass and change in velocity or force and time.
- Use impulse equation to solve for an unknown variable.
- Solve using conservation of momentum for the three different types of problems: recoil, inelastic and elastic.