Chapter 8: Energy

Text:
Chapter 8 *(skip sections 8.7 to 8.9)*
Think and Explain: 1-4
Think and Solve: 1-3

Vocabulary:
Work, energy, Joule, Watt, kinetic energy, potential energy, mechanical energy, power, Conservation of Energy

Equations:

$$KE = \frac{1}{2}mv^2 \qquad PE = mgh \qquad W = Fd \qquad P = \frac{W}{t}$$

Key Objectives:
Concepts
- ❑ Relate the direction of force and distance to the work done on an object.
- ❑ Recognize when work is done by a force.
- ❑ Relate the total work done on something to its total energy.
- ❑ Define power and state the units of power.
- ❑ Distinguish between mechanical energy and other forms of energy.
- ❑ Distinguish between potential energy and kinetic energy.
- ❑ Explain the concept of Conservation of Energy.
- ❑ List several types of energy and how it applies to conservation of energy.
- ❑ Describe the energy transformations that take place in daily situations, e.g. driving a car or using a cell phone.

Problem Solving
- ❑ Calculate the work done by a force acting over a distance.
- ❑ Calculate power in watts.
- ❑ Convert between watts and kilowatts.
- ❑ Calculate the kinetic energy, potential energy, and total energy of an object or a system.
- ❑ Apply principle of energy conservation to problem solving involving work, kinetic energy and potential energy.
- ❑ Make and interpret graphs of KE, PE and Total Energy vs time.