

Momentum and Energy

Study Guide: Chapter 3 in *Conceptual Physical Science*, 4th edition

Objectives: When you finish this unit you should be able to:

- Define momentum and impulse. Explain how you can change force of impact.
- State and use in problems the law of conservation of momentum.
- Define work and its units and calculate how much work is done.
- Define potential and kinetic energy and give examples. Calculate gravitational PE. Calculate KE using $\frac{1}{2}mv^2$. Understand the relationship of these two quantities in free fall.
- Use the work energy theorem to relate work done to energy, especially kinetic. State the law of conservation of energy.
- Define Power and its units and work simple problems.
- Describe the basic concept of a machine. Give some examples. Calculate the % efficiency of a machine.

Activities:

- Read chapter 3.
- Try to answer mentally review questions 3, 9, 11, 12, 16, 17, 19, 23, 24, 27. Answer as many of the following Exercises as possible: 1-6, 11, 27, 42, 43, 44, 46. Answer on paper Problems 2, 4, 5, 8, 13.
- Demonstrations and lab work
- Practice Book pages 19, 21, 22, 23, 25, 26. (3rd edition)