

Kinetic Theory, Matter, and Heat

Study Guide: Chapters 6 and 7 , *Conceptual Physical Science*, 4th edition

Objectives: You should be able to:

- state the basic ideas of kinetic theory and the differences between solid, liquid and gas.
- define temperature and thermal energy
- understand the energy relationships between solid, liquid and gas; use the terms endothermic and exothermic; work simple temperature and phase change problems
- apply the concept of specific heat capacity to practical applications
- explain the importance of thermal expansion and give examples and applications
- use the ideas of kinetic theory and interparticle forces to explain properties such as evaporation, vapor pressure, boiling point and melting point. You should be able to apply them to everyday life.
- describe and explain the unusual properties of water
- explain and apply the heat transfer mechanisms of conduction, convection, and radiation

Activities and Assignments:

- Reading assignment - Chapters 6 and 7 (4th edition)
- Review questions in chapter 6
1, 2, 6, 8, 9, 10, 11, 13, 14, 15, 22, 23, 24, 25, 26, 28, 29, 30
Review questions in chapter 7
1-5, 12, 17, 18, 19, 21, 22, 23, 24, 25, 29, 30
- Exercises in chapter 6
5, 13, 14, 15, 17, 19, 24
Exercises in chapter 7
3, 4, 5, 9, 10, 11, 12, 13, 16, 20, 30, 32, 34, 37, 38, 39, 40
- Problems in chapter 6
1, 3, 4, 5
- Lecture
- HW Problems on temperature and phase changes in matter
- Lab activity: Modeling the Phases of Matter
- Lab activity: The Heat Lab
- Practice Book pages 45, 51, 53, 54 (4th edition)