**Matter and Properties of Matter**
**Study Guide**

*Textbook chapters and pages:*

- Chapter 2 (Sec. 1 and Sec. 2): Pgs. 36-39; Pgs. 43-51
- Chapter 3 (Sec. 1 and Sec. 2): Pgs. 60-63, 67; Pgs. 68-73

***Study Questions:***

1. What is matter? What are the two criteria?
    a. Matter is anything that has _____ and _____.

2. What is mass?

    a. What is the difference between mass and weight?

3. What is volume?

    a. How do you measure the volume of solids (SI units)?

    b. How do you measure the volume of liquids (SI units)?
        i. What instruments/tools could you use to measure the volume of liquids?

4. Define the term "***physical property***" of matter.

    a. List at least five physical properties. Give an example of that physical property for a substance (ex: the density of water is 1.00 g/cm3)

5. What is a ***"chemical property"***? What are two chemical properties?

    a. Give 3 examples of a chemical *change.*

    b. What might be some signs of a chemical *change?*

    c. How is a chemical *property* different from a *chemical change?*

6. What are the <u>characteristic</u> chemical and physical properties of matter?

7. What are the four states of matter? Describe the bonding/attraction of the molecules in each state of matter.

    a. _____

    b. _____

    c. _____

    d. _____

8. Name the processes that allow the following changes in state to occur and identify whether (heat) **energy was added [<u>endothermic</u>]**, or if **energy was lost/released [<u>exothermic</u>]**

a. Solid → liquid: _____

    i. ***endothermic*** (heat added)? or ***exothermic*** (heat lost)?

b. Liquid→ solid

    i. ***endothermic*** (heat added)? or ***exothermic*** (heat lost)?

c. Liquid →gas

    i. ***endothermic*** (heat added)? or ***exothermic*** (heat lost)?

d. Gas → liquid

    i. ***endothermic*** (heat added)? or ***exothermic*** (heat lost)?

e. Solid → gas

    i. ***endothermic*** (heat added)? or ***exothermic*** (heat lost)?

9. Define the following and give the temperature for each point for Water (˚C):
    a. Melting point:

    b. Freezing point:

    c. Boiling point:

    d. Condensation point