**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?
   * Matter is anything that has \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. What is mass?
   * What is the difference between mass and weight?
3. What is volume?
   * How do you measure the volume of solids (SI units)?
   * How do you measure the volume of liquids (SI units)?
     1. What instruments/tools could you use to measure the volume of liquids?
4. Define the term “***physical property***” of matter.
   * 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?
   * Give 3 examples of a chemical *change.*
   * What might be some signs of a chemical *change?*
   * How is a chemical *property* different from a *chemical change?*
6. What are the characteristic 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.
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   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. What is a chemical reaction?
9. Define the following and give an example:
   * Element:
   * Compound:
   * Mixtures:
     1. Solutions:
     2. Suspensions:
     3. Colloids:
10. Explain the relationship and distinguish between **elements**, **atoms**, **molecules** and **compounds.**

1. What is the name of the table that lists all known elements in the universe?
2. What are the three categories of elements, and what are their characteristics?
3. What are some ways we can separate mixtures?

1. Define:
   * Soluble:
   * Insoluble:
   * Solute:
   * Solvent:
   * Dilute solution:
   * Concentrated Solution:
   * Saturated Solution:
   * Unsaturated:
2. What are some ways you can increase solubility rates and explain why these methods make sense to increase solubility rates?
3. How do we measure solution **concentration**? How do we measure solution **solubility**?
4. What are the different types of solutions? (Give examples)
5. How can we distinguish what is a solution, colloid and suspension using light? (Describe how each would appear if a flashlight were to be shone through each)