STUDY GUIDE ~ CP Chemistry
TEST: Unit 4 - Matter, Energy, and Change

This is a study GUIDE. Your best resources for information and reinforcing concepts is the CLASS POWERPOINT SLIDES (available on SchoolWires site!), class materials, labs, and handouts.

TEST FORMAT:

• 10 FILL-IN the blank (Word Bank provided) ~ 2 pts each
• 20 Multiple Choice ~ 2 pts each
• 5 Short Open Response Questions ~ 6 pts each
  
  **Topics:**
  
  o 4 density problems
  
  o 1 SHORT ANSWER: Describe the equipment and procedure you would use to determine the density of BOTH a cube of lead and a seashell.

  **PRACTICE RESPONSE:**

• 1 Essay-Style Open Response Question (Thoroughly answer ALL parts of the question) ~ 10 pts

  Particle models of four different types of matter are shown in the diagram below.

  ![Particle Models Diagram]

  a. Identify which of the four models best represents a pure compound. Explain your answer and give a specific example of a compound.

  b. Identify which of the four models best represents a homogeneous mixture. Explain your answer and give a specific example of a homogeneous mixture.

  c. Describe one method that could be used to separate a homogeneous mixture.
VOCABULARY: Define each of the following terms.

- Matter
- Mass
- Volume
- Extensive property
- Intensive property
- Physical property
- Chemical property
- Physical change
- Chemical change
- Melting point
- Boiling point
- Freezing point
- Malleability
- Ductility
- Corrosive
- Hardness
- Combustive
- Solid
- Liquid
- Gas
- Vapor
- Phase
- Energy
- Heat
- Temperature
- Mixture
  - Heterogeneous mixture
  - Homogenous mixture
- Solution
- Filtration
- Distillation
- Element
- Compound
- Density
PRACTICE:

Identify each as a compound, element, heterogeneous mixture, or homogenous mixture.
1) _______________ zinc (Zn)
2) _______________ carbon dioxide (CO₂)
3) _______________ HCl in water (aqueous solution)
4) _______________ potting mix/dirt
5) _______________ PowerAid Sports Drink

Identify each as a physical property or chemical property.
6) _______________ Combustible
7) _______________ Density
8) _______________ Luster
9) _______________ Flammability
10) _______________ Reacts with acid

Identify each as a physical or chemical change.
11) _______________ Heat changes H₂O to steam
12) _______________ Wood rots
13) _______________ Iron (Fe) rusts
14) _______________ Alcohol evaporates
15) _______________ Sugar dissolves in water

1. What is the density of CO gas if 0.196 g occupies a volume of 100 ml?

Answer_________
2. A block of wood measuring 3 cm on each side has a mass of 27 g. What is the density of the block?

Answer_________

3. An irregularly shaped stone was lowered into a graduated cylinder holding a volume of water equal to 2 ml. The height of the water rose to 7 ml. If the mass of the stone was 25 g, what was its density?

Answer_________

4. Copper has a density of 8.96 g/cm³. If a sample of copper has a mass of 20 g, what is the volume of the sample?

Answer_________

5. Silver has a density of 10.5 g/cm³ and gold has a density of 19.3 g/cm³. Which would have the greater mass, 5 cm³ of silver or 5 cm³ of gold?

Answer_________