

DENSITY QUESTIONS

NAMES:

1. Job was walking down the street and noticed a shiny object. The necklace he found looked very pretty, shiny and new. He decided he would give it to his girlfriend proclaiming his love and expensive tastes. Belinda wasn't sure she could accept his token or his love as he was a known heart breaker. She decided to test him. WHAT SCIENCE PRINCIPLE COULD SHE USE TO TEST THE NECKLACE TO DISCOVER IF IT WAS A PRECIOUS METAL?
 2. The necklace had a mass of 88 grams and a volume of 10 milliliters. Show the math below:
 3. What ~~metal~~ was the necklace made from?
 4. Should Belinda dump Job? WHY
-

Name(s):

Core:

Date:

Thinking about Density?

Directions: Please follow the Scientific Method procedures we learned to work through today's lab.

1. Question: How do you find the Density of an object?
2. Hypothesis: (I believe... because)
3. Procedure: In your groups you will be discovering the density of 4 different objects. Density is equal to Mass divided by Volume.
Density = Mass/Volume

Quick Questions:

How do you find the Mass of an object?

What is displacement?

What units will your answer be in?

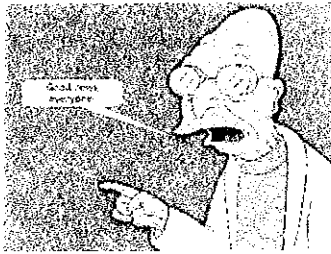
4. Results: Please place your results in the data table below.

<u>Object</u>	<u>Mass</u>	<u>Volume by Displacement</u>	<u>Density</u>

5. Analysis: What does the data table show?

6. Conclusion: Summarize this lab in 3 or more complete sentences.

7. Further Questions: How can Density be used to determine the quality of jewelry?



Name _____

Date _____ Period _____

Density Review Worksheet

1. Define density and write the formula for calculating density.

2. What is the density of water (include your units!)

Solve the problems below using the density formula

3. What is the density of an object with a mass of 125 g and a volume of 176 mL?

4. A sample of wood occupies a space of 200 mL and masses 75 g. What is its density?

5. If an object has the following dimensions (length = 6cm, width = 3 cm, and height = 1.5 cm) and a mass of 36 grams, what would its density be?

6. What is the mass of a sample of iron assuming that the density is 7.87 g/mL and occupies a volume of 25 mL?

7. Gold has a density of 19.32 g/mL. if you take a ring that has a mass of 2.5 g, how much space would this amount of gold occupy (what is the volume)?

8. In a lab, you need to determine the density of silly putty. You place it in a graduated cylinder that has 25 mL of water in it to start. The water level rises up to 29 mL after the silly putty is added. If the mass of silly putty is 8 grams, calculate the density (using water displacement too find volume).

9. Label whether each of the following would sink or float in water:

- a. Air - 0.0013 g/mL _____
- b. Corn oil - 0.93 g/mL _____
- c. Glycerine - 1.26 g/mL _____
- d. Corn syrup - 1.38 g/mL _____
- e. Wood - 0.85 g/mL _____
- f. Steel - 7.81 g/mL _____
- g. Ice - 0.92 g/mL _____
- h. Water - 1.00 g/mL _____

10. Assuming that the materials in question 10 do not mix, put them in the order in which they would "stack up" in a graduated cylinder.

GRAPHING ACTIVITY DENSITY MYSTERY

DIRECTIONS: On a separate sheet of paper solve the mystery below (a data table might help) and then produce a graph to show the evidence to the supervisor in charge.

Something strange was taking place in the science lab one night. The workers were all gathered, intently measuring several substances. Their mission was to discover what the strange symbols stood for and then to rank each according to their densities. You have been called in to lend a hand because of your knowledge of the periodic table and quick thinking ability.

The following substances lay about the lab (one in a container marked Fe) and the four others marked with the letters: Au, Ag, Al, and Cu. YOUR information:

*****The substance Au also had a number beside it that read 19.3 but no other mark was found on it.

*****Ag had two numbers and letters: 105 g and 10 ml.

*****Al also had two numbers and letters: 54 g and 20 ml

*****Cu had a single number 8.8

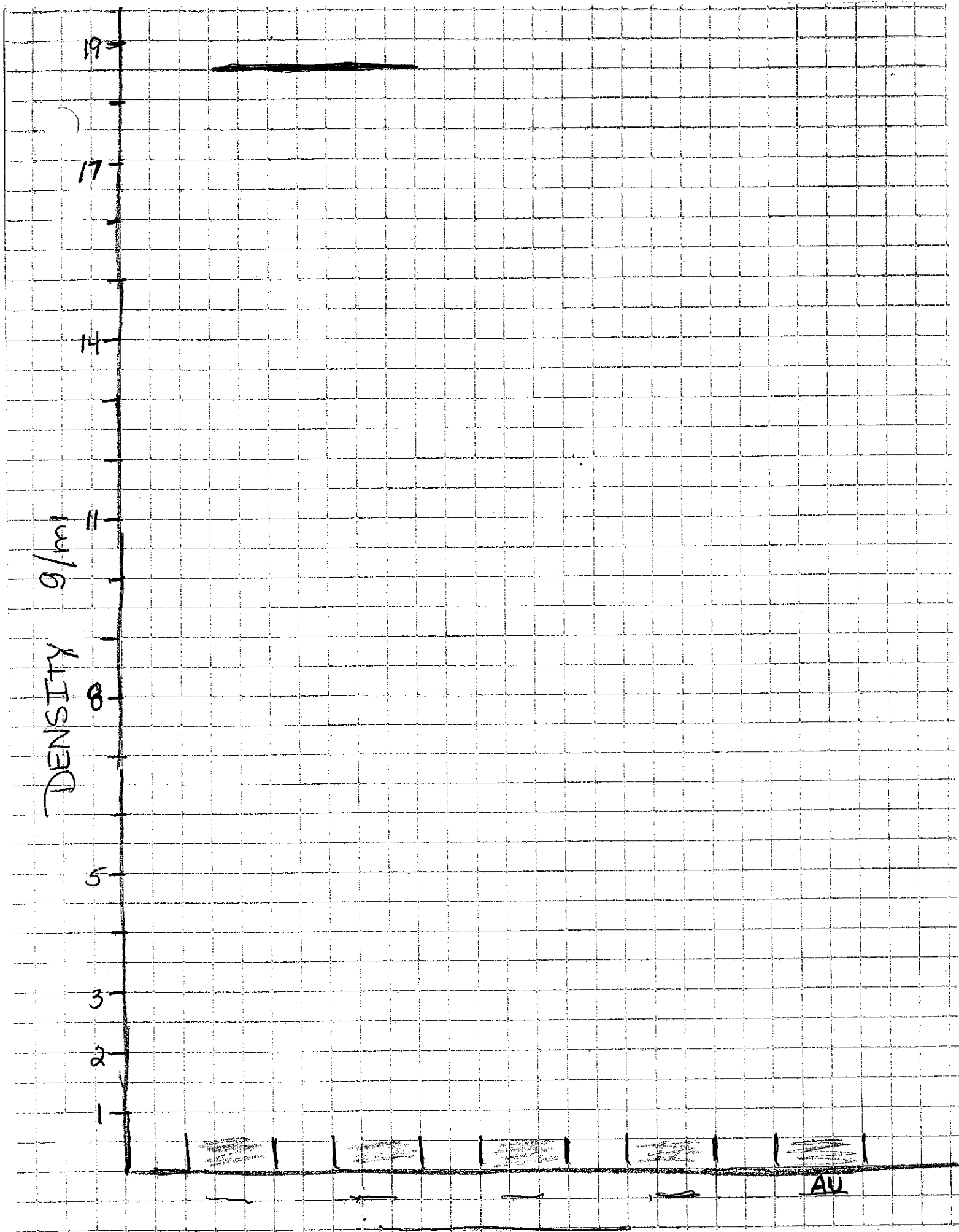
****Fe seemed to offer the most information as it had a single number and two letters: 7.8 g/ml

CAN YOU HELP THE LAB WORKERS????

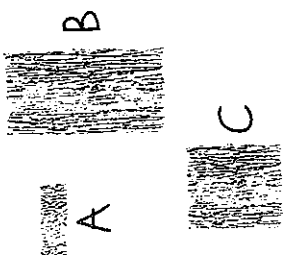
WHAT ARE THE SUBSTANCES SCATTERED ABOUT THE LAB?

GRAPH THEM IN ORDER WITH THE SMALLEST FIRST AND THE LARGEST (MOST DENSE) LAST. Remember to include all labels neatly on your graph paper.

WHAT TYPE OF GRAPH WILL YOU USE?????



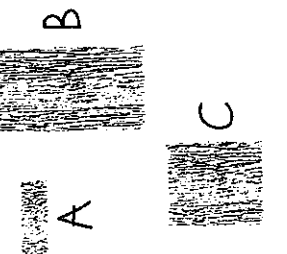
Think and Write



A straight wood board is cut into three differently sized pieces. Each piece has identical width and thickness, but different lengths.

Which board has the greatest mass? Greatest volume? Greatest Density? Explain your thinking!

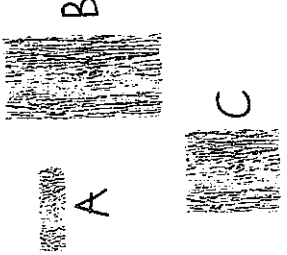
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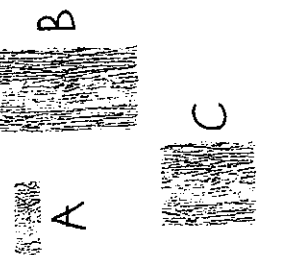
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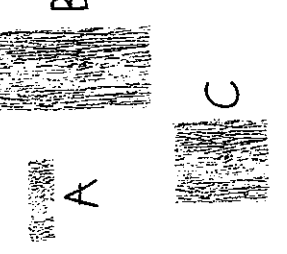
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Name _____ Date _____

Use with textbook pages 160–164.

Solutes and solvents

Define the terms “solute” and “solvent” in your own words.
Then list the solvent and the solute for each solution that follows.

Define these terms in your own words.

1. Solute: _____

2. Solvent: _____

For each solution, identify the solvent and the solute.

3. Taku mixed some water and juice crystals to make a fruit drink.

(a) The solute is _____.

(b) The solvent is _____.

4. Kim swished salt water in her mouth after she lost her tooth in a soccer game.

(a) The solute is _____.

(b) The solvent is _____.

5. Rosanna put rubbing alcohol on the grass stain that was on her sock.

(a) The solute is _____.

(b) The solvent is _____.

6. Justin added a little sugar to his tea because it tasted bitter.

(a) The solute is _____.

(b) The solvent is _____.

7. The tea from Mei's tea bag coloured the water as it brewed.

(a) The solute is _____.

(b) The solvent is _____.

Section 6.1 Comprehension

Chapter 6

Name _____ Date _____

Use with textbook pages 160–164

True or false?

Read section 6.1 about solutes and solvents.

Read the statements given below. If the statement is true, write “T” on the line in front of the sentence. If it is false, write “F” and circle the word or words that make it false.

1. ___ Soluble substances can dissolve in certain solvents.
2. ___ Insoluble substances can dissolve in all solvents.
3. ___ All substances are soluble in water, which is called the “universal solvent.”
4. ___ Table salt is insoluble in water.
5. ___ Grass stains are difficult to wash out because chlorophyll is insoluble in water.
6. ___ When sugar dissolves in water, water particles pull sugar particles off the sugar crystal.
7. ___ Water particles are not actually water molecules.
8. ___ Concentrated solutions contain a large amount of solute for a certain volume of solvent.
9. ___ Dilute solutions contain a large amount of solute for a certain volume of solvent.
10. ___ Solutions with high concentrations of solutes are concentrated.
11. ___ Solutions with low concentrations of solutes are dilute.
12. ___ You can decrease the concentration of a solution by adding more solute.