DATE: NAME: CLASS:

CHAPTER 7

Comparing Densities

BLM 3-13

Goal o Use this page to compare the densities of different substances.

What to Do

Use the information in the table to answer the following questions.

Fluid	Density (g/mL)	Solid	Density (g/cm^3)
hydrogen	0.000 09	Styrofoam™	0.005
helium	0.0002	cork	0.24
air	0.0013	oak	0.70
oxygen	0.0014	sugar	1.59
carbon dioxide	0.002	salt	2.16
ethyl alcohol	0.79	aluminum	2.70
machine oil	0.90	iron	7.87
water	1.00	nickel	8.90
seawater	1.03	copper	8.92
glycerol	1.26	lead	11.34
mercury	13.55	gold	19.32

1. You drop three things into a glass of water: a piece of Styrofoam™, a piece of oak, and a gold ring.
   (a) Which will float?

   _____

   _____

   (b) Which will sink?

   _____

   _____

2. Which is denser:
   (a) carbon dioxide or air?
   (b) oxygen or air?
   (c) hydrogen or air?

. You find a white granular substance in a jar in your cupboard. You suspect that it may be either sugar or salt. How could you find out without tasting the substance?

_____

_____

. Why is it easier to swim in seawater than it is to swim in fresh water?

_____

_____

. A student comes to the conclusion that solids are denser than liquids. Is this true? Explain.

_____

_____

Name Date

Applying Knowledge
Section 7.2

Use textbook pages 264–265.

Density detective

Use your detective skills to find the identity of the mystery objects. First calculate the density of the object. Then use the Table of Densities to decide what the object is made of.

Table of Densities

Solids	Density (g/cm^3)	Solids	Density (g/cm^3)
marble	2.56	copper	8.92
quartz	2.64	gold	19.32
diamond	3.52	platinum	21.4

1. 

While digging in the backyard, you find an old coin. Its mass is 26.76 g and its volume is 3 cm^3. What is the density of the coin?

Calculation:

What is the coin made of? _____

2. 

You think you have found a diamond. Its mass is 5.28 g, and its volume is 2 cm^3. What is the density of the object?

Calculation:

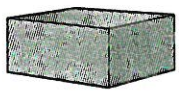
What did you find? _____

3. 

You find a ring with a mass of 107 g. You fill a graduated cylinder up with 10 mL of water and put the ring into the cylinder. The water rises up to the 15 mL mark. What is the density of the ring?

Calculation:

What is the ring made of? _____

4. 

There is a block on your desk that acts as a paperweight. Its measurements are: 3 cm by 4 cm by 6 cm. The block has a mass of 184.32 g. What is the density of the block?

Calculation:

What is the block made of? _____