Name _____ Date _____ Class _____

WORKSHEET 32 **MATH IN SCIENCE: INTEGRATED SCIENCE**

MATH SKILLS USED
Multiplication
Division
Decimals

Density

Calculate density, and identify substances using a density chart.

Density is a measure of the amount of mass in a certain volume. This physical property is often used to identify and classify substances. It is usually expressed in grams per cubic centimeters, or g/cm³. The chart on the right lists the densities of some common materials.

Densities of Substances

Substance	Density (g/cm³)
Gold	19.3
Mercury	13.5
Lead	11.4
Iron	7.87
Aluminum	3.7
Bone	1.7–2.0
Gasoline	0.66–0.69
Air (dry)	0.00119

EQUATION: $\text{density} = \frac{\text{mass}}{\text{volume}}$

$$D = \frac{m}{V}$$

SAMPLE PROBLEM: What is the density of a billiard ball that has a volume of 100 cm³ and a mass of 250 g?

$$D = \frac{250\ \text{g}}{100\ \text{cm}^3}$$

$$D = 2.5\ \text{g/cm}^3$$

Your Turn!

1. A loaf of bread has a volume of 2270 cm³ and a mass of 454 g. What is the density of the bread?

_____

2. A liter of water has a mass of 1000 g. What is the density of water? (Hint: 1 mL = 1 cm³)

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3. A block of wood has a density of 0.6 g/cm³ and a volume of 1.2 cm³. What is the mass of the block of wood? Be careful!

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4. Use the data below to calculate the density of each unknown substance. Then use the density chart above to determine the identity of each substance.

	Mass (g)	**Volume** (cm³)	**Density** (g/cm³)	**Substance**
	Example: 4725	350	4725 ÷ 350 = 13.5	mercury
a.	171	15	_____	_____
b.	148	40	_____	_____
c.	475	250	_____	_____
d.	680	1000	_____	_____