4-9
Comparing Densities

Name: Date:

Vocabulary: N/A	**Student Notes**
Big Ideas: N/A	
Key Question: Why is most of an iceberg below the water? Review of KMT rules: - _____ usually have _____ densities than liquids because their particles are tightly packed together, and are held by the attractive forces between the particles - _____ tend to be _____ _____ because their particles have a little more space in between them - _____ have VERY LARGE spaces in between them and therefore have the _____ _____ - When substances _____ _____, there spaces between their particles_____. - Most Density Tables record their information for a substances state at _____ temperature (for example gold is a solid and oxygen is a gas). There are exceptions to the above general rules: 1.) _____ - Liquid at room temperature - One of the most dense elements (over and above most	

solids)

2.) _____

- _____ water is more dense that _____ water
- This exception explains why _____ float
- If the liquid in the beaker is not water and ice cube may not float. It must be a liquid with a density more than the density of ice.

Calculating the amount of a substance submerged:

_____ _____

Using table 1 for page 122 (section 2-7) calculate the percentage of object submerged:

1.) ice and seawater

2.) pine (wood) and vegetable oil

Name: _____ Date: _____

Comparing Densities: Worksheet

Densities of Common Substances

The density of distilled water is used as a standard. Make predictions about the buoyancy of other substances—solids, liquids, and gases.

A. What is the density of distilled water? If a solid floats on water, is its density less than or greater than the density of water? Check the chart at the right. List all the solids that will float on water.

_____

_____

B. Use the chart to find the density of mercury. Do you think solids that will float on mercury have a lower or higher density than mercury? When you have decided, list all the solids that will float on mercury.

_____

_____

_____

_____

C. Use the chart to find the density of air. To find the gases that will float on air, should you look for higher or lower densities? List all the gases that will float on air.

_____

Fluids	Density	
	g/cm³ (g/mL)	kg/m³
hydrogen	0.000 089	0.089
helium	0.000 179	0.179
air	0.001 29	1.29
oxygen	0.001 43	1.43
carbon dioxide	0.001 98	1.98
gasoline	0.69	
isopropanol (rubbing alcohol)	0.79	
vegetable oil	0.92	
distilled water	1.00	
seawater	1.03	
glycerol	1.26	
mercury (a metal)	13.55	
Solids		
wood (balsa)	0.12	
wood (pine)	0.50	
wood (birch)	0.66	
ice	0.92	
sugar	1.59	
salt	2.16	
aluminum	2.70	
limestone	3.20	
iron	7.87	
nickel	8.90	
silver	10.50	
lead	11.34	
gold	19.32	

A. Solids that float on water	B. Solids that float on liquid mercury	C. Gases that float on air

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