

9. Draw a representation of each of the following in the boxes to the right:
- Element - pure; one atom kind
 - Compound - pure; 2 different elements
 - Molecule - 2 atoms joined
 - Mixture of elements
 - Mixture of compounds
 - Mixture of elements and compounds

A. Element oxygen	B. Compound Carbon Dioxide
C. Molecule oxygen molecule	D. Mix of Elements Elements
E. Mix of Compounds Compounds	F. Mix of Compounds + Elements Compounds + Elements

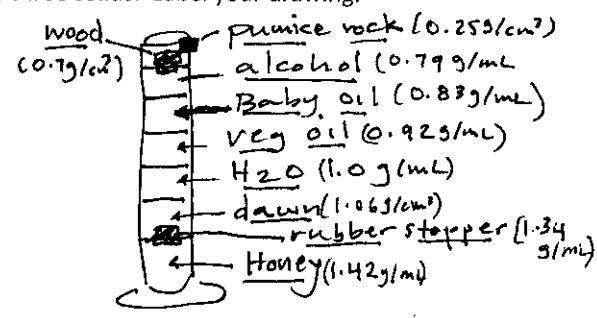
10. Density is a measure of what? amount of mass per volume

11. How is density different than mass? density is how tightly packed molecules are / it is a proportion. Mass is simply how much matter is present.

12. What is the density of water? 1.0 g/ml

13. Tell whether or not the substance will float or sink in water based on its density. Circle the correct answer. Draw this density column with the appropriate liquids layered correctly. Include the three solids. Label your drawing.

- Rubbing alcohol has a density of .79 g/cm³ Float/Sink
- ✓ Dawn Dish Soap has a density of 1.06 g/cm³ Float/Sink
- ✓ c. Honey has a density of 1.42 g/cm³ Float/Sink
- d. Baby oil has a density of .83 g/cm³ Float/Sink
- e. Vegetable oil has a density of .92 g/cm³ Float/Sink
- f. Wood that has a density of 0.7 g/cm³ Float/Sink
- g. Pumice rock that has a density of 0.25 g/cm³ Float/Sink
- h. Rubber Stopper density is 1.34 g/cm³ Float/Sink



14. What formula is used to find the density of a substance or object? $D = \frac{m}{V}$

15. A sample of copper has a volume of 10.0 cm³ and a mass of 89.6 grams. What is the density of copper? (SHOW YOUR WORK!)

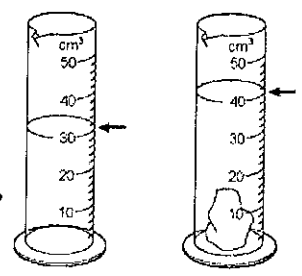
$$D = \frac{m}{V} \quad D = \frac{89.6g}{10cm^3} \quad D = 8.96 g/cm^3$$

16. A piece of Silver has a density of 10.5 g/cm³. If the volume is 5cm³, what is the mass? (SHOW YOUR WORK!)

$$D = \frac{m}{V} \quad D = 10.5 g/cm^3 = \frac{x}{5cm^3} \quad x = 52.5g$$

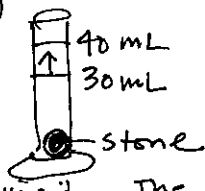
17. A piece of Gold has a density of 19.3 g/cm³. If the mass is 193 grams, what is the volume? (SHOW YOUR WORK!)

$$D = \frac{m}{V} \quad 19.3 g/cm^3 = \frac{193g}{x} \quad \frac{19.3 \times x = 193g}{19.3} \quad x = 10 cm^3$$



18. An irregularly shaped stone was lowered into a graduated cylinder holding a volume of water equal to 30 ml. The height of the water rose to 40 ml. If the mass of the stone was 30 grams, what was its density? (SHOW YOUR WORK!)

$$D = \frac{m}{V} \quad D = \frac{30g}{10cm^3} \quad D = 3.0g/cm^3$$



19. Explain how the Galileo Thermometer works.

The spheres position themselves according to the density of the liquid inside. The density of the spheres and liquid changes with temperature changes.

20. Explain which sphere would be least dense, which is most dense and which is close to the density of the liquid inside the glass.

