

Name _____

Date _____

MODULE #1 STUDY GUIDE
The Basics

A. Atoms and Molecules

1a. Define atom –

1b. Define molecule -

2. Fifty grams of a carbon disulfide can be broken down into 42.1 grams of sulfur and 7.9 grams of carbon. Is carbon disulfide made up of atoms or molecules?

3. If you put iron near to magnet, the iron will be attracted to the magnet. Rust is made up of molecules that contain iron atoms and oxygen atoms. Rust is not attracted to a magnet. If rust contains iron atoms, and iron is attracted to a magnet, why isn't rust attracted to a magnet?

4. A statue is made out of copper and displayed outside. After many years, what color will the statue be?

5. Have scientists actually seen atoms?

B. The Metric System

7. If you wanted to measure an object's mass, what metric unit would you use?

What English unit would you use?

8. If you wanted to measure an object's volume, what metric unit would you use?

What English unit?

9. If you were to measure an object's length, what metric unit would you use?

What English unit would you use?

C. Manipulating Units

6. Give the numerical meaning for the prefixes:

a. centi -

b. milli -

c. kilo -

Use the **FACTOR/LABEL METHOD** for the problems below and show **ALL** your work.

D. Concerting Between Units

10. How many centimeters are in 1.3 meters?

11. If a person has a mass of 75kg, what is his or her mass in grams?

E. Concerting Between Systems

12. How many liters of milk are in 0.500 gallons of milk? (1 gal =3.78 L)

13. A meterstick is 100.0 centimeters long. How long is it in inches? (1 in = 2.54 cm)

F. Concentration

1c. Define concentration -

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14. Ozone is a poisonous gas that can build up in the air in dense cities. Thus, there are many environmental initiatives to lower the amount of ozone in the air we breathe. One way you can make ozone, however, is by baking bread. The nice smell you associate with baking bread is actually due, in part, to ozone. If ozone is poisonous, why is baking bread not considered a dangerous activity?

X. (*extra*) Two different cleaning products have exactly the same active ingredient. One is “industrial strength” and cleans much more effectively than the other, which is “regular strength.” If they each have exactly the same active ingredient, what is the difference between the two cleaners?

(answer is in the Solutions Manual, Quarter Test #1, question #6)