Name:_____ Block:_____ Date:_____

ChemThink: Particulate of Nature

Class code: _____ Username: *first name last name* **Password:** *chemistry*

- **Element:** a substance made up of only_____.
- **Pure Substance**: the smallest individual particles (atoms) are **the same/different**
- **Molecule:** _____ or more atoms are **chemically/physically** joined together

A water molecule has_____hydrogen atoms and _____oxygen atoms.

The chemical formula for water is :_____ Draw the water molecule

Subscripts in a chemical formula tell us _____

No subscript next to a chemical symbol = that there **are none/is one** of the atom present.

- A **compound** is: _____

Draw a nitrogen molecule: Write the formula for nitrogen_____.

How many atoms of nitrogen are present in a nitrogen molcule:_____

Draw the CO_2 molecule: What elements are present in the CO_2 molecule?_____ and_____

How many oxygen atoms are present in CO_2 molecule?_____

Draw oxygen molecule: Oxygen is an example of a _____because there is more than one atom bonded_____.

- **Mixture** is: _____

Write the formula for the mixture of nitrogen, carbon dioxide, and oxygen: _____

- **Summary**
  1. Atoms or molecules of a solid are arranged _____ and they move by _____. Indication of a solid is done so by adding _____.
  2. Atoms or molecules of a liquid have _____ but _____. Indication of a liquid is done so by adding _____.
  3. Atoms or molecules of a gas move _____ and they are _____. Indication of a gas is done so by adding _____.
- **Draw a picture of**

Mixture of carbon dioxide & argon

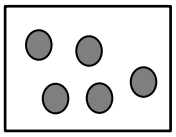
The formulas for this mixture are: _____

Pure substance & an element

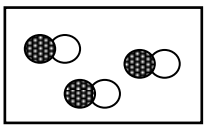
mixture of an element & a compound

- To describe **how many atoms** or **molecules** are present, place a _____ in front of the chemical formula.

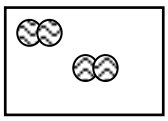
Now you try it: Using coefficients, describe how many of the atoms and molecules are present in each box below



_____He

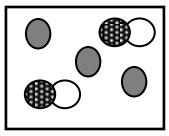


_____CO



____F_2

Using the figures above for He, CO, and F_2, indicate which element and compound are present in below image. Include coefficients.



_____ _____ + _____ _____

- **Now…. "try the questions".**

Complete the **Question Set** for the Particulate Nature of Matter. This is graded. Finish questions successfully, you will need to answer 10 questions correctly before missing 3 questions! Follow the directions. Read carefully, Note: If you have to redo the question set more than 3 times, you need to:

●Read the notes you have taken ● redo the tutorial ●see your teacher for help

- **Conclusion Questions: The three states of matter**

1. **Describe** the movement of

   solids _____

   liquids _____

   gases _____

2. Identify the letters used to indicate the 3 states of matter, solid ___, liquid ___, and gas ___.
3. In each of the following formulas, underline the **coefficients** and circle the **subscripts**.

   3 $Al(OH)_3$ 4 NaCl NO_3 2 $Mg_3(PO_4)_2$

Use your ChemThink notes or textbook to summarize the definition of each of the following:

4. Element: _____
5. Molecule:_____
6. Compound:_____
7. Pure Substance:_____
8. Mixture:_____
9. Subscript:_____
10. Coefficient:_____