

Week 2 Packet – Regular Chem

This is hopefully all the handouts we will use this week in Honors Chem. Due to the challenging logistics of this year, please offer grace if I miss a handout or if things change during the week.

You are not required to print! I understand that may not be possible for everyone. However, if you can print it will make things a little easier! **There are blank pages so it can be printed double sided.** Some printers don't print double sided, but you can tell it to print the odd pages first, take the papers that just printed and put them back in the printer tray, and then print the even pages. I am trying to figure out how I can print packets for students and hopefully leave them outside of school for people to pick up if they want a packet. As soon as I know whether or not this is allowed I will let you know!

Please note –All of these pages are on the class website, always!
www.mychemistryclass.net

Please keep in mind that we are operating under the assumption that we will return to school at some point this year! So make sure you are doing your work, keeping your work, and keeping it organized! I will check your Interactive Notebook when we return so you want to make sure you are setting yourself up for success by doing your work now!

Unit #0 – Chemical Foundations

Know	Want to Know
Visual Representation	
Key Items	Costa's Questions
	Level 3
	Level 2
	Level 1

Cross Cutting Concepts – Unit #0 - Chemical Foundations

Scale, proportions and quantity	Stability and change	Patterns

- Cut off the top portion of this page.
- Make it into a pocket on p. 13
- Put glue on the left and right edge, and the bottom edge. No glue on the top edge or you will seal off the pocket!
- You will fill these columns with items/facts/ideas/concepts/examples etc from the chapter that fit into each of the “cross cutting concepts.”
- You will put quizzes and extra practice into the pocket during the chapter.
- Bullet points are fine, drawing pictures is fine, writing paragraphs is fine, it is up to you!



Put glue here!

Put glue here!

Put glue here!

Types of Matter Worksheet

1) Define the following:

a. Element –

d. Mixture –

b. Molecule –

e. Homogeneous mixture –

c. Compound –

f. Heterogeneous mixture –

2) What did the marshmallows represent in this activity? What did the toothpicks represent?

3) The element section did not have any toothpicks. Why?

4) What is the difference between a molecule and a compound?

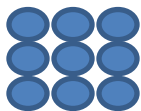
5) If you were looking at the particles, a drawing, or model of a compound, what are some things you would notice?

6) If you were looking at the particles, a drawing, or a model of a molecule, what is one thing you could see that you would not see in a compound?

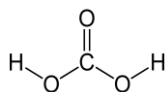
7) In the mixture section, why didn't you connect the water and the salt with a toothpick?

8) Look at the particles of the following substances. Determine if it is an element, compound, or mixture.

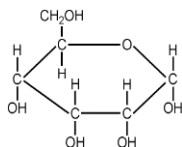
Pure Gold (Au)



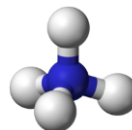
Carbonic Acid



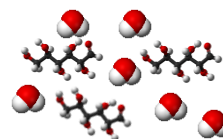
Sugar (C₆H₁₂O₆)



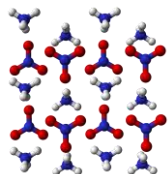
Ammonia (NH₃)



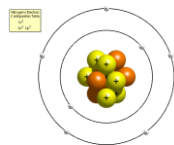
Kool Aid



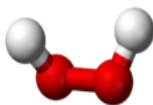
Mystery Substance



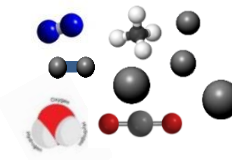
Nitrogen



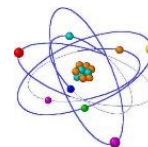
H₂O₂



Air



Silver (Ag)

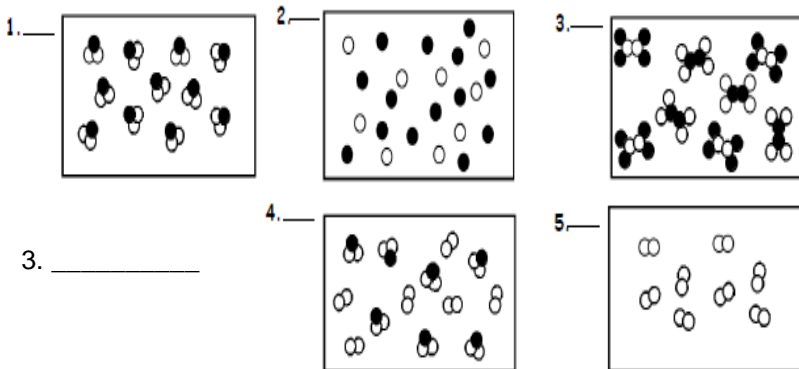


9) Identify if each statement is referring to an atom, element, molecule, compound, or mixture.

- a. The smallest unit of an element that has the same properties as the element.
- b. A pure substance made of two or more atoms of the same element that are bonded together
- c. More than one substance chemically bonded together, can be separated only by chemical means.
- d. More than one substance that can be separated by physical means.
- e. A pure substance that is made of all the same type of atom.

10) Match the diagrams to the description that best matches.

- a. Element
- b. Compound
- c. Mixture of Elements
- d. Mixture of Compounds
- e. Mixture of Elements and Compounds

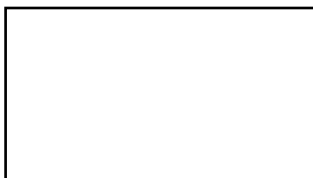


1. _____ 2. _____ 3. _____
 4. _____ 5. _____

11) Draw particle diagrams (like you see in Q10) for each of the things described.



Homogenous mixture made up of an gaseous element and a gaseous compound.

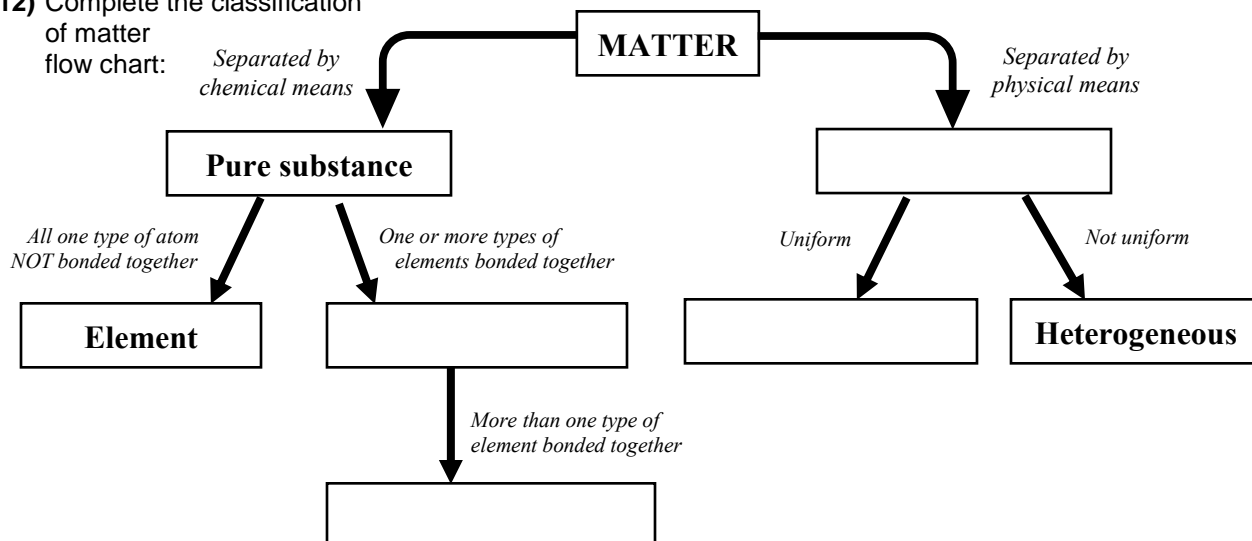


Heterogeneous mixture made up of two different liquid compounds



Homogenous mixture made up of two different solid elements

12) Complete the classification of matter flow chart:



Types of Matter and Mixtures - Check your understanding!

True or False? Answer these questions as a group. Check your answers when done.

Don't peek at the answers ahead of time! ☺

- _____ Oxygen (O_2) is a mixture
- _____ Air is a molecule.
- _____ An element is made out of only one kind of atom.
- _____ The atoms in a pure element are not bonded together.
- _____ The atoms in a molecule are not bonded together.
- _____ When looking at drawings of a molecule, the "spheres" often represent molecules, & lines or sticks represent the bonds connecting them.
- _____ A molecule could be made of the same atoms or different atoms that are bonded together.
- _____ Ozone (O_3) is made of three oxygen atoms and is a compound.
- _____ Water, salt and carbon dioxide are all molecules.
- _____ Water, salt, and carbon dioxide are all compounds.
- _____ NaCl is made out of four different kinds of atoms.
- _____ H_2O_2 is made up of 2 hydrogen atoms and 2 oxygen atoms.
- _____ Ammonia (NH_3) is a compound.
- _____ ~~A water molecule is in the shape of a triangle.~~
- _____ ~~A carbon dioxide molecule has a single bond.~~
- _____ Bonds are formed when the electrons in the outer shell are shared or transferred.
- _____ Atoms are the building blocks of elements, molecules, compounds, and mixtures.
- _____ Sodium Chloride, or table salt, is a compound.
- _____ Air is a mixture of many different gas molecules.
- _____ Pizza is a heterogeneous mixture.
- _____ Salt water is a heterogeneous mixture.
- _____ ~~A solution is when one substance dissolves in another.~~
- _____ ~~In Keol Aid, water is the solute.~~
- _____ ~~In Keol Aid, the sugar is the solute.~~
- _____ Another word for air is oxygen.
- _____ Often when you look at the drawing of a compound, you will notice that there are different colored "spheres" bonded together.
- _____ Tap water has many things dissolved in water. This means that tap water is a homogeneous mixture.
- _____ ~~Solutions are homogeneous mixtures.~~
- _____ Pure water (H_2O) is a compound and a molecule.

Phases and Changes Worksheet

Draw particulate diagrams to model what is happening on the atomic level during a physical change versus a chemical change. Use things such as labels, keys/legend, color, size, showing passage of time, etc to make your model detailed and understandable. If you would like more space you can always make a flippy! Big or small!

Video on particulate diagrams if you don't remember from previous science classes: <https://youtu.be/tTyD2n1vxJE>

Physical Change

Chemical Change

Determine whether the following things are physical properties (PP), physical changes (PC), chemical properties (CP), or chemical changes (CC). Refer to your chart of information for help! When done, check answers!

Hint: Changes are things that are happening Properties are things that can happen

Example: Iron rusting = chemical change. Iron rusts = chemical property.

#	Physical/Chemical Property/Change	Answer
1	Burning a log	
2	Bending a wire of Aluminum	
3	TNT reacts very, very fast when ignited	
4	The table top is black	
5	Boiling water	
6	Melting copper	
7	A decaying tree trunk	
8	Vinegar smells sour	
9	Iron rusting	
10	Acid reacts with water and gives off heat	
11	Water evaporating from sugar water	
12	Glucose and yeast ferment to make alcohol.	
13	Ice freezes at 0°Celsius and boils at 100° Celsius	

#	Physical/Chemical Property/Change	Answer
14	Digesting your lunch	
15	Grinding sand	
16	Freezing water to make ice	
17	Iron metal rusts when exposed to oxygen	
18	Zinc reacts with HCl and produces a gas	
19	Wood and alcohol are flammable	
20	Milk sours	
21	Water is absorbed by a paper towel	
22	Salt dissolves in water	
23	The density of an object is 3.2 g/mL	
24	A pellet of sodium hydroxide is sliced in two	
25	The metal object is hard, while the pillow is soft	
26	Li is put in water, catches fire and makes LiOH	