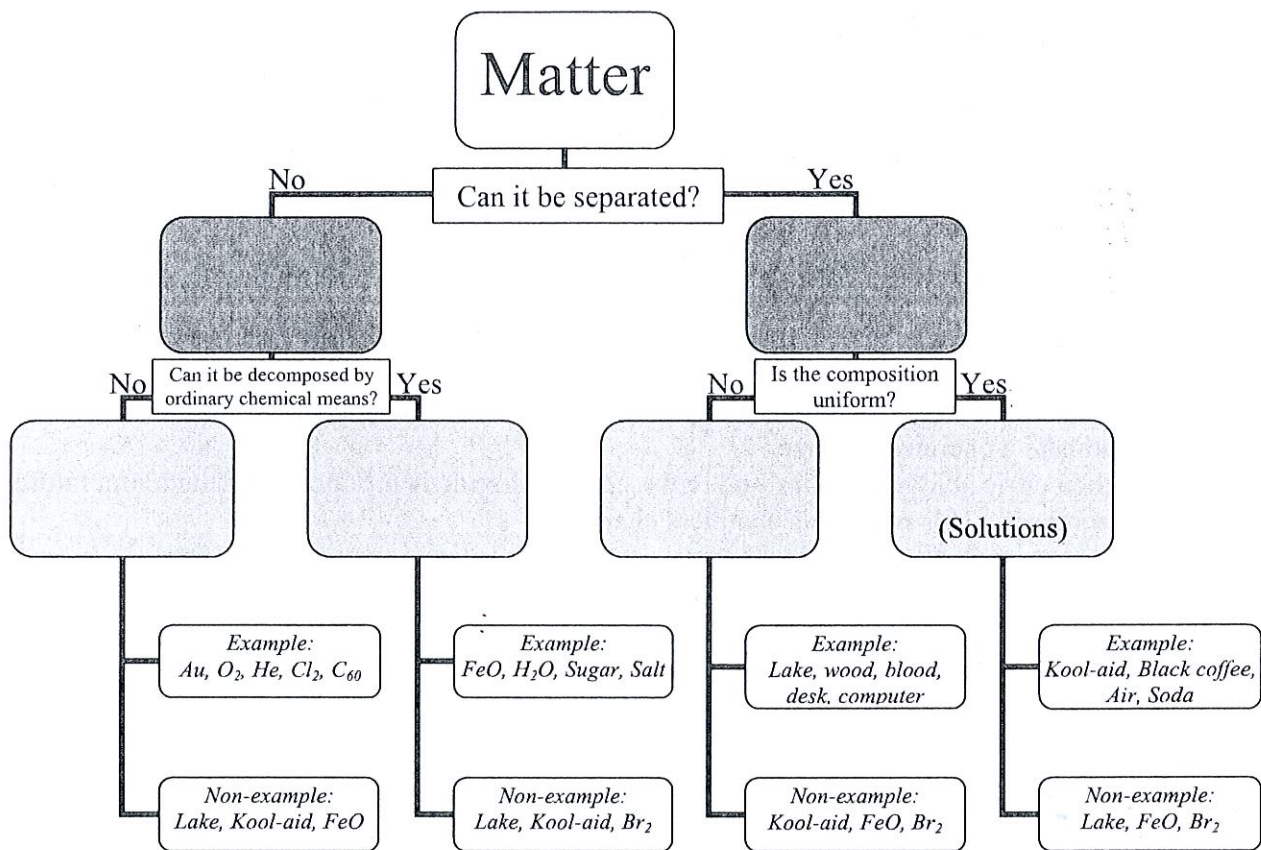


Unit 3 Review

Warm-Up:



Substance or Mixture?

1. Sand _____
2. Copper _____
3. Sodium Chloride _____
4. Lake _____

Homogeneous or Heterogeneous?

1. Rocky Road Ice Cream _____
2. Black Coffee _____
3. Salt Water _____
4. Muddy Water _____

Matter Homework Packet

Name _____
Period _____

Physical and Chemical Changes and Properties of Matter Worksheet

Classify the following as chemical change (cc), chemical property (cp), physical change (pc), or physical property (pp).

- | | |
|---------------------------------|---------------------------|
| 1. _____ Heat conductivity | 8. _____ Combustible |
| 2. _____ Silver tarnishing | 9. _____ Water freezing |
| 3. _____ sublimation | 10. _____ Wood burning |
| 4. _____ magnetizing steel | 11. _____ Acid resistance |
| 5. _____ length of metal object | 12. _____ Brittleness |
| 6. _____ shortening melting | 13. _____ Milk souring |
| 7. _____ exploding dynamite | 14. _____ baking bread |

Identify the following as being true or false to the left of the sentence.

- _____ 15. A change in size or shape is a physical change.
- _____ 16. A chemical change means a new substance with new properties was formed.
- _____ 17. An example of a chemical change is when water freezes.
- _____ 18. When platinum is heated, then cooled to its original state, we say this is a physical change.
- _____ 19. When milk turns sour, this is a physical change because a change in odor does not indicate a chemical change.
- _____ 20. When citric acid and baking soda mix, carbon dioxide is produced and the temperature decreases. This must be a chemical change.

Identify each of the following as a physical or chemical change.

21. _____ You leave your bicycle out in the rain and it rusts.
22. _____ A sugar cube dissolves.
23. _____ Scientist break-up water into oxygen and hydrogen gas.
24. _____ Burning coal for a barbecue.
25. _____ Trimming a bush because it has grown too tall.

Name _____
Period _____

Classifying Matter Worksheet

Classify each of the following substances as an element, a compound, a solution (homogenous mixture, or a heterogeneous mixture.

- | | | |
|----------------------------------|-------------------------------------|--------------------|
| 1. Sand | 2. Salt | 3. Pure Water |
| 4. Soil | 5. Soda just opened | 6. Pure air |
| 7. Carbon Dioxide | 8. Gold | 9. Brass |
| 10. Oxygen | 11. Italian Salad Dressing | 12. Salt Water |
| 13. Raisin Bran | 14. Silver | 15. Lithium Iodide |
| 16. Apple Pie | 17. Kool Aid | 18. Sugar Water |
| 19. Chocolatechip Cookie | 20. Gatorade | 21. Gold |
| 22. tacos | 23. Lead | 24. Ceasar Salad |
| 25. Calcium | 26. Whole Milk | 27. Skim Milk |
| 28. hydrogen peroxide | 29. Potassium | 30. Sugar |
| 31. Raisin Bran Cereal with Milk | 32. Raisin Bran Cereal without Milk | |

Chemical Bonding – A Review

Name: _____ Period: 2 3 4

Type of Bond – Using the difference in electronegativity, determine if the bond is **ionic** (>1.5), **covalent** (>0.5), or **polar covalent** (b/w $0.5 - 1.5$).

1. H₂S
2. Mg₃P₂
3. SCl₆
4. CO
5. KF
6. NCl₃

Ionic Bonds

1. How do ionic bonds form?
2. Metals form which type of ion, cation (+) or anion (-) and do they do so by gaining or losing valence electrons?
3. Nonmetals form which type of ion, cation (+) or anion (-) and do they do so by gaining or losing valence electrons?
4. Draw Lewis structures (electron dot diagrams) to show the transfer of electrons in forming an ionic bond between these metals and nonmetals. Remember to write the charges formed and the formula for the resulting compound.
 - a. Rb and S
 - c. Ga and P

b. Be and N

d. Ba and O

Covalent Bonds

1. How does a covalent bond form?

2. Draw Lewis structures for the following covalent compounds:

a. H_3P

c. C_2Br_4

b. H_2CS

d. N_2O

3. Determine the VSEPR shape and bond angle of the following molecules:

a. SiI_4

c. PH_3

b. H₂Se

d. CO₂

Metallic Bonds

1. What are alloys?
2. Describe an interstitial alloy. A substitutional alloy.
3. What make compounds with metallic bonds conductive?

Properties of Bonds: Give at least 3 different properties of each type of compound.

Ionic Compounds	Covalent Compounds	Metallic Compounds