

Name \_\_\_\_\_ Date \_\_\_\_\_

### **Elements, Compounds & Mixtures Worksheet**

**Part 1:** Read the following information on elements, compounds and mixtures. Fill in the blanks where necessary.

#### **Elements (pure substances):**

1. A pure substance containing only one kind of \_\_\_\_\_.
2. An element is always uniform all the way through (homogeneous).
3. An element \_\_\_\_\_ be separated into simpler materials (except during nuclear reactions).
4. Over 118 existing elements are listed and classified on the \_\_\_\_\_.

#### **Compounds (pure substances):**

5. A pure substance containing two or more kinds of \_\_\_\_\_.
6. The atoms are \_\_\_\_\_ combined in some way. Often times (but not always) they come together to form groups of atoms called molecules.
7. A compound is always homogeneous (uniform).
8. Compounds \_\_\_\_\_ be separated by physical means.  
Separating a compound requires a chemical reaction.
9. The properties of a compound are usually different than the properties of the elements it contains.

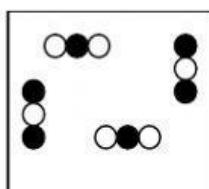
#### **Mixtures:**

10. Two or more \_\_\_\_\_ or \_\_\_\_\_ NOT chemically combined.
11. No reaction between substances.
12. Mixtures can be uniform (called \_\_\_\_\_) and are known as solutions.
13. Mixtures can also be non-uniform (called \_\_\_\_\_).
14. Mixtures can be separated into their components by chemical or physical means.
15. The properties of a mixture are similar to the properties of its components.

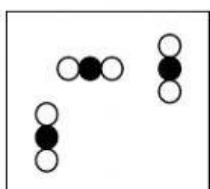
**Part 2:** Classify each of the following as elements (E), compounds (C) or Mixtures (M). Write the letter X if it is none of these.

|   |  |  |                                      |
|---|--|--|--------------------------------------|
| <input type="checkbox"/> Diamond (C)        | <input type="checkbox"/> Sugar ( $C_6H_{12}O_6$ )    | <input type="checkbox"/> Milk            | <input type="checkbox"/> Iron (Fe)   |
| <input type="checkbox"/> Air                | <input type="checkbox"/> Sulfuric Acid ( $H_2SO_4$ ) | <input type="checkbox"/> Gasoline        | <input type="checkbox"/> Electricity |
| <input type="checkbox"/> Krypton (K)        | <input type="checkbox"/> Bismuth (Bi)                | <input type="checkbox"/> Uranium (U)     | <input type="checkbox"/> Popcorn     |
| <input type="checkbox"/> Water ( $H_2O$ )   | <input type="checkbox"/> Alcohol ( $CH_3OH$ )        | <input type="checkbox"/> Pail of Garbage | <input type="checkbox"/> A dog       |
| <input type="checkbox"/> Ammonia ( $NH_3$ ) | <input type="checkbox"/> Salt ( $NaCl$ )             | <input type="checkbox"/> Energy          | <input type="checkbox"/> Gold (Au)   |
| <input type="checkbox"/> Wood               | <input type="checkbox"/> Bronze                      | <input type="checkbox"/> Ink             | <input type="checkbox"/> Pizza       |
| <input type="checkbox"/> Dry Ice ( $CO_2$ ) | <input type="checkbox"/> Baking Soda ( $NaHCO_3$ )   | <input type="checkbox"/> Titanium (Ti)   | <input type="checkbox"/> Concrete    |

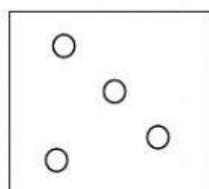
**Part 3:** Match each diagram with its correct description. Diagrams will be used once.



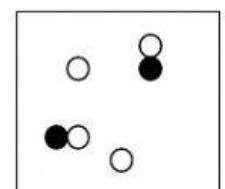
**A**



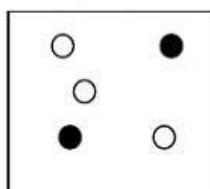
**B**



**C**



**D**



**E**

1. Pure Element – only one type of atom present.
2. Mixture of two elements – two types of uncombined atoms present.
3. Pure compound – only one type of compound present.
4. Mixture of two compounds – two types of compounds present.
5. Mixture of a compound and an element.