Chemistry Worksheet: Matter #1

1. A mixture **(is/is not)** a chemical combining of substances.

2. In a compound the **(atoms/molecules)** are **(chemically/physically)** combined so that the elements that make up the compound **(retain/lose)** their identities and **(do/do not)** take on a new set of properties.

3. The smallest identifiable unit of a compound is a(n) _____, which is made up of _____ which are chemically bonded.

4. True or False: A mixture is always made up of a combination of elements.

5. In a mixture, the substances **(lose/retain)** their identities.

6. In a mixture the substances involved **(can/cannot)** be separated by a simple physical process.
   In a compound the elements involved **(can/cannot)** be separated by a simple physical process because the elements are **(physically combined/chemically bonded)**.

7. True or False: An element can be broken down into a simpler substance.

8. The smallest identifiable unit of an element is a(n) _____.

9. From the following list of substances, circle the ones that are elements:

silver	carbon dioxide	wood alcohol	chromium
water	hydrogen	carbon	nitrogen
oxygen	gold	sugar	salt
air	sulfur	magnesium	nickel

10. Explain how to separate the sugar and water in a solution of sugar and water.

11. How would you separate a mixture of alcohol and water?

12. How would you separate sand and water?

13. Classify the following as pure substances or as mixtures:

air	gasoline	grain alcohol
water	sugar	gold
mercury	oxygen	salt water

14. Classify the following as heterogeneous or as homogeneous:

sand & salt mixture	hydrogen	iron
salt water	unfiltered air	iron with rust
pure water	an apple	nitric acid
tossed salad	granite	wood

15. Classify the following as an element, a compound, a solution, or a heterogeneous mixture:

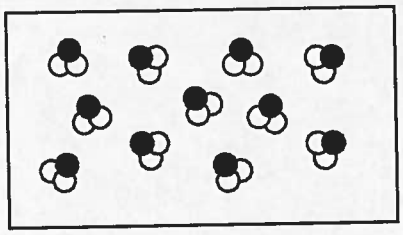
aluminum	raisin bread
carbon dioxide	water
sugar and water	sulfur
sulfuric acid	mercury
an orange	water & instant coffee
a pencil	carbon particles & sugar
nitrogen	air
gasoline	grain alcohol

Elements, Compounds, and Mixtures

Classify each of the pictures below by placing the correct label in the blanks below:

A= Element
B= Compound
C= Mixture of elements
D= Mixture of compounds
E= Mixture of elements and compounds

Each circle represents an atom and each different color represents a different kind of atom. If two atoms are touching then they are bonded together.



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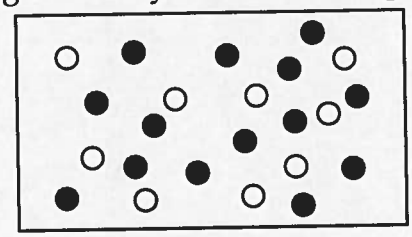

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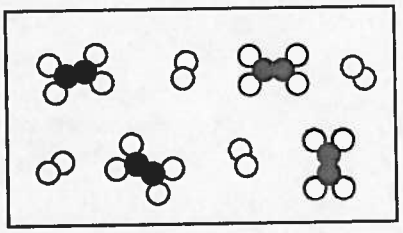

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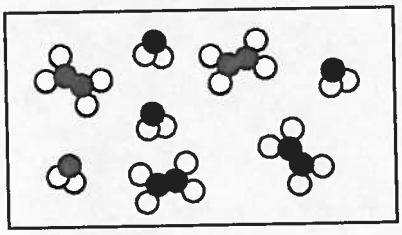

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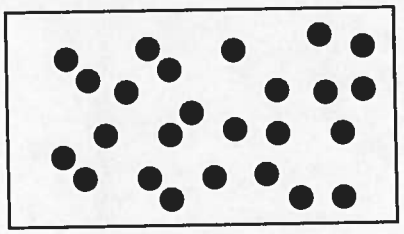

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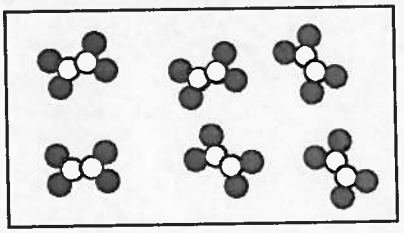

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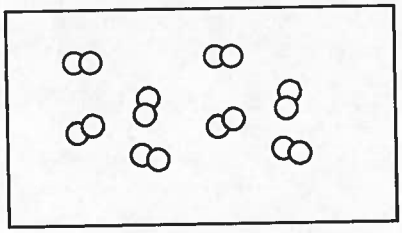

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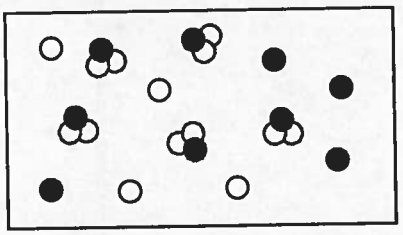

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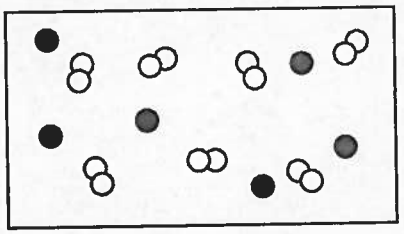

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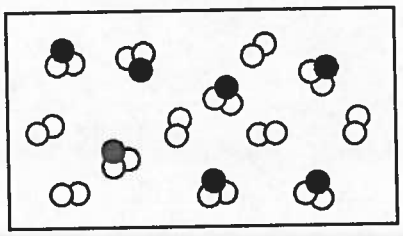

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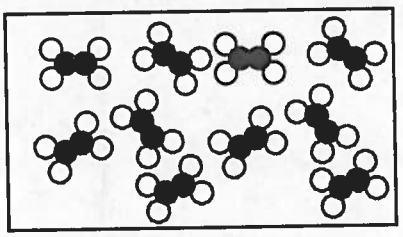

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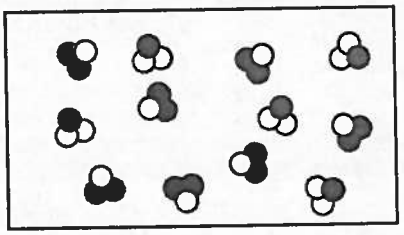

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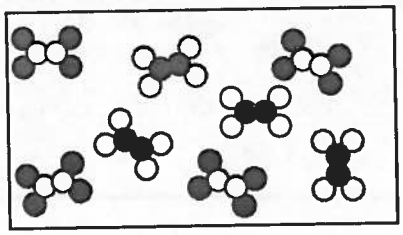

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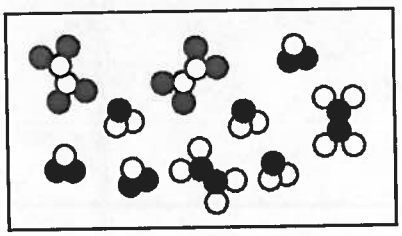

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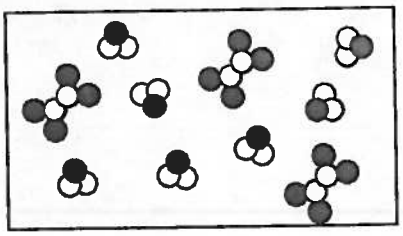

15) _____

Physical and Chemical Changes

Name: _____

Date: _____ Hour: ___

Place a check in the appropriate column:

Change	Physical Change	Chemical Change
Salt dissolves in water.		
Hydrochloric acid reacts with magnesium to produce hydrogen gas.		
A piece of copper is cut in half.		
A sugar cube is ground up.		
Water is heated and changed to steam.		
Iron rusts.		
Ethyl alcohol evaporates.		
Ice melts.		
Milk sours (goes bad).		
Sugar dissolves in water.		
Sodium and potassium react violently with water.		
Pancakes cook on a griddle.		
Grass grows on a lawn.		
A tire is inflated with air.		
Food is digested in the stomach.		
Water is absorbed by a paper towel.		
Ethyl alcohol boils at 79°C.		
Paper burns.		
Water freezes at 0°C.		
Fireworks explode.		
Alka-Seltzer gives off carbon dioxide when added to water.		
Clouds form in the sky.		

NAME _____

Chemistry I Worksheet
Classification of Matter and Changes

INSTRUCTIONS: Write **E** in the blank if the material is *heterogeneous* or **O** if it is *homogeneous*.

1. Wood _____
2. Freshly-brewed black coffee _____
3. Water _____
4. Lucky Charms® _____
5. Salt _____
6. Dirt _____
7. Sausage-and-mushroom pizza _____
8. Air _____
9. Milk _____
10. Gold _____

INSTRUCTIONS: Classify each of the following as an *element* [**E**], a *compound* [**C**], or a *mixture* [**M**].

11. Gold _____
12. Water _____
13. Seawater _____
14. Sugar _____
15. A chocolate sundae _____
16. Air _____
17. Carbon dioxide _____
18. Silver _____
19. Ice _____
20. A Big Mac® _____

INSTRUCTIONS: Classify each of the following properties of matter as *physical* [**P**] or *chemical* [**C**].

21. Color _____
22. Density _____
23. Burns easily (flammable) _____
24. Not affected by acids _____
25. Boils at 450 °C _____
26. Reacts violently with chlorine _____
27. Good conductor of heat _____
28. Dissolves readily in water _____
29. Melts at 145 °C _____
30. Malleable _____

INSTRUCTIONS: Classify each of the following changes in matter as *physical* [**P**] or *chemical* [**C**].

31. Grinding chalk into powder _____
32. Dissolving salt in water _____
33. Dissolving zinc in acid _____
34. Tearing a piece of paper _____
35. Stretching copper into wire _____
36. Burning gasoline _____
37. Hammering gold into foil _____
38. Melting ice _____
39. Digesting food _____
40. Making hydrogen from water _____

INSTRUCTIONS: Classify each of the following as an *intensive property* [**I**] or an *extensive property* [**E**].

41. Mass _____
42. Density _____
43. Melting point _____
46. Color _____
47. Volume _____
48. Length _____