

Key

## 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) molecule which is made up of atoms 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) atom.
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.

Boil off water

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

distill - separate by boiling points

12. How would you separate sand and water?

filter - separate by particle size

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

air	MIX	gasoline	M	grain alcohol	MIX
water	Pure	sugar	pure	gold	pure
mercury	Pure	oxygen	pure	salt water	MIX

14. Classify the following as heterogeneous or as homogeneous:

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

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

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

## Elements, Compounds, and Mixtures

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

A= Element

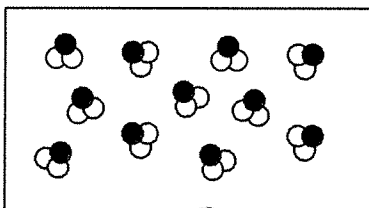
B= Compound

C= Mixture of elements

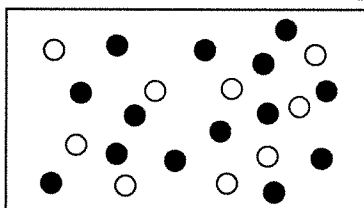
D= Mixture of compounds

E= Mixture of elements and compounds

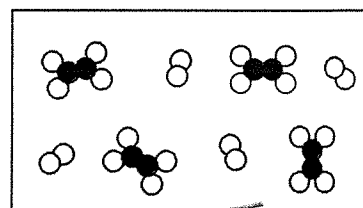
Each circle represents an atom and each different color represents a different kind of atom. If two atoms are touching then they are bonded together.



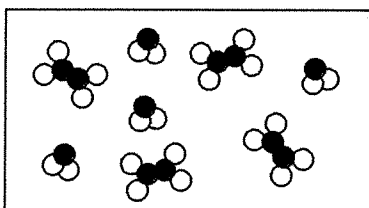
1) B



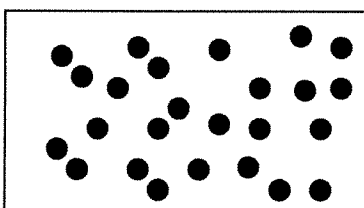
2) C



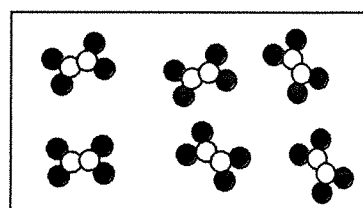
3) E



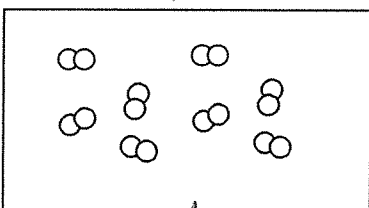
4) D



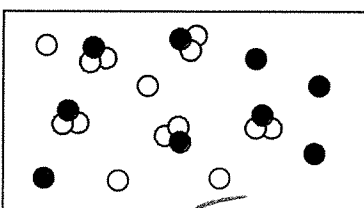
5) A



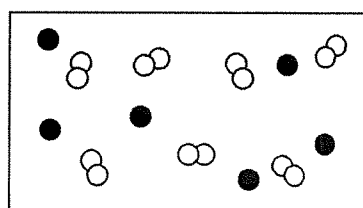
6) B



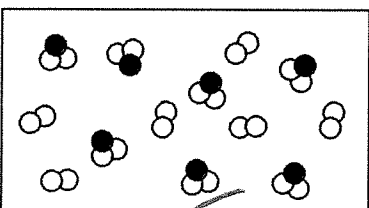
7) A



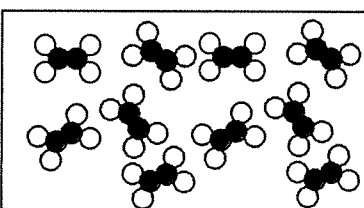
8) E



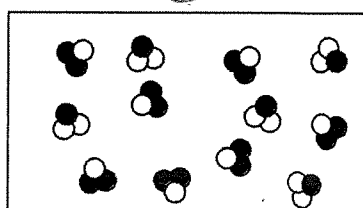
9) C



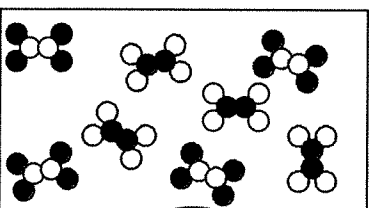
10) E



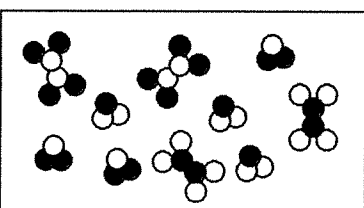
11) B



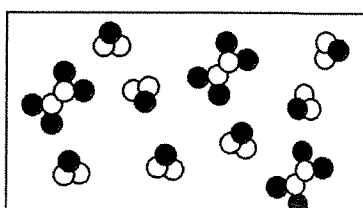
12) D



13) D



14) D



15) D

# 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.	✓	