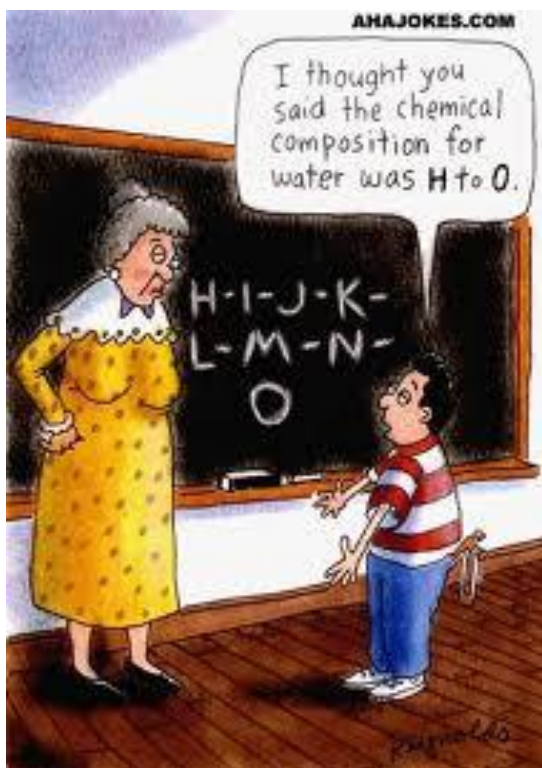


Matter and the Atom



Name _____

Test
Date _____

Matter and Its Properties

Word	Definition
Mass	Measured in:
Matter	
Atom	
Element	Ex:
Compound	Ex:
Characteristic property	Used for?
Extensive property	Ex:
Intensive property	Ex:

Physical properties:

Ex:

Physical Change:

Ex:

Solid:

Liquid:

Gas:

Write the vocab word for each of the phase changes below:

- a. Solid to liquid
- b. Liquid to gas
- c. Gas to liquid
- d. Liquid to solid
- e. Solid to gas
- f. Gas to solid

Chemical properties:

Ex:

Chemical change:

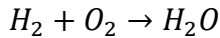
Ex:

*A chemical change is often written as a _____
_____.

Chemical reactions are labeled in two sections:

- a)
- b)

Label the reaction provided below.



There are 5 main indicators of a chemical change

- 1)
- 2)
- 3)
- 4)
- 5)

**** The only 100% guaranteed way to indicate a chemical change is _____*****

Identify the following as a physical/chemical change

- | | |
|----------------------|--------------------------|
| 1) Breaking a pencil | 5) Hard boiling an egg |
| 2) Wood burning | 6) Grinding coffee beans |
| 3) Silver tarnishing | 7) Burning gasoline |
| 4) Ice melting | |

More Practice: Try at home when studying!

- | | |
|--------------------------------|------------------------------|
| 1) Cutting a piece of paper | 4) Permanently coloring hair |
| 2) Brownies baking in the oven | 5) Painting nails |
| 3) Boiling water | 6) Freezing popsicles |

Define the law of conservation of energy:

Classification of Matter

Define mixture:

Mixtures can either be _____ or _____.

A homogeneous mixtures is:

They are also called _____

Examples:

Heterogeneous Mixtures are:

Draw a picture of a heterogeneous mixture

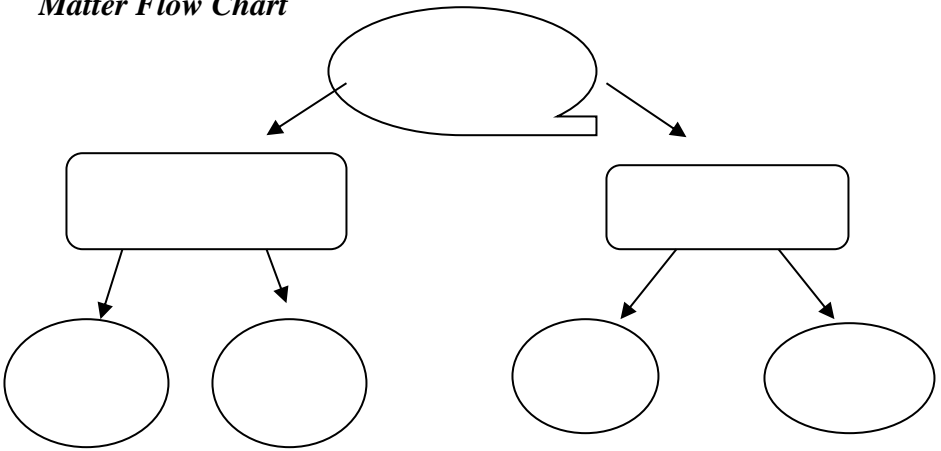
Examples:



Is it heterogeneous of homogeneous?

- | | |
|--------------------|-------------------|
| 1) Stainless steel | 5) Hand Lotion |
| 2) Granite | 6) Oil and water |
| 3) Air | 7) Wild Bird Seed |
| 4) Blood | 8) Chunky PB |
| | 9) Dirt |

Matter Flow Chart



How do pure substances differ from mixtures?

1.

2.

Colloids/Suspension/Solutions:

A solution is a

Ex:

Alloy:

A suspension is a

Ex:

A colloid is a

Ex:

Tyndall Effect:

The Atom

Matter can be classified as _____ and _____.

There are two types of pure substances: _____ and _____.

The smallest unit of an element is called an _____.

The atom is made up of:

- 1)
- 2)
- 3)

Parts of the Atom

Particle	Symbol	Charge	Relative mass	Location in Atom

Define nucleons:

Define atomic number (Z):

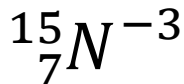
Define mass number (A)

Define atomic mass:

Define ion:

Define isotopes:

Define nuclides:



Write Isotope Notation for the following:

a) Calcium-41

b) Sodium-23

c) Bromine-81

Hyphen Notation

Nitrogen-15

Nitrogen-14

a. What is different about these isotopes?

b. What is the same about them?

Helpful Hints with protons, neutrons and electrons

*

*

*

Solving for Protons, Neutrons and Electrons:

<i>Element (or ion)</i>	<i>Atomic #</i>	<i>Mass #</i>	<i>Average Atomic Mass</i>	p^+	n^0	e^-	<i>Isotope notation</i>

Calculating Average Atomic Mass

This system is a relative system based on the mass of a standard nuclide.

This nuclide is _____.

The unit for measuring atomic masses is the _____
(Abbreviation: _____)

Ex 1) Calculate the average atomic mass of boron if a sample contains:

Isotope Abundance:

19.78% Boron-10 (AM = 10.013 amu)

80.22% Boron-11 (AM = 11.009 amu)

Answer: _____

Ex 2) What is the atomic mass of an element with the following isotopes.

Isotope Abundance:

- Magnesium-24 78.70%
- Magnesium-25 10.13%
- Magnesium-26 11.17%

Answer _____

History of the Atom

Dalton's Atomic Theory

- 1.
- 2.
- 3.
- 4.

Person	How did he contribute?
Democritus	
Dalton	
J.J. Thomson	
Rutherford	
Bohr	
Chadwick	

Models of the Atom	
Dalton's	Plum Pudding (Thomson's)
Nuclear (Rutherford's)	Planetary (Bohr's)
Electron Cloud	