

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Per#: \_\_\_\_\_

## Matter Topic#3

### Objectives

- Matter (Elements, Compounds, and Mixtures.)
  - Differentiate between chemical and physical properties of matter.
  - Categorize changes as either physical or chemical.
  - Determine differences between elements, compounds, and mixtures.
  - Prove the Law of Conservation of Mass.
  - Distinguish between symbols and formulas.

### Vocabulary

- |                     |                     |                      |                      |
|---------------------|---------------------|----------------------|----------------------|
| ● atom              | ● product           | ● period             | ● homogeneous        |
| ● pure substance    | ● chemical reaction | ● extensive property | ● mass               |
| ● change of state   | ● plasma            | ● nonmetal           | ● intensive property |
| ● reactant          | ● chemistry         | ● family (or group)  | ● liquid             |
| ● chemical          | ● compound          | ● mixture            | ● molecule           |
| ● solid             | ● physical property | ● gas                | ● metalloid          |
| ● chemical change   | ● compound          | ● metal              | (semimetal,          |
| ● weight            | ● physical change   | ● heterogeneous      | semiconductor)       |
| ● chemical property | ● element           | ● matter             |                      |

### Formulas/Conversion Definitions/Diagrams

#### Formulas

density = mass  $\div$  volume,  $d = m/V$  (label: (g) = g/L, (l) = g/mL, and (s) g/cm<sup>3</sup> or g/mL)

#### Drawings:

Phase Diagram Activity: Key Words (gas, liquid, solid, melting, freezing, vaporization, condensation, sublimation, and deposition.

Matter Flow Chart Activity: Key Words (pure substances, matter, mixtures, elements, compounds, homogeneous mixtures, separates upon standing, never separates, uniform, atom, molecule, heterogeneous mixtures, chemically combined, metals-nonmetals-metalloids and solutions)

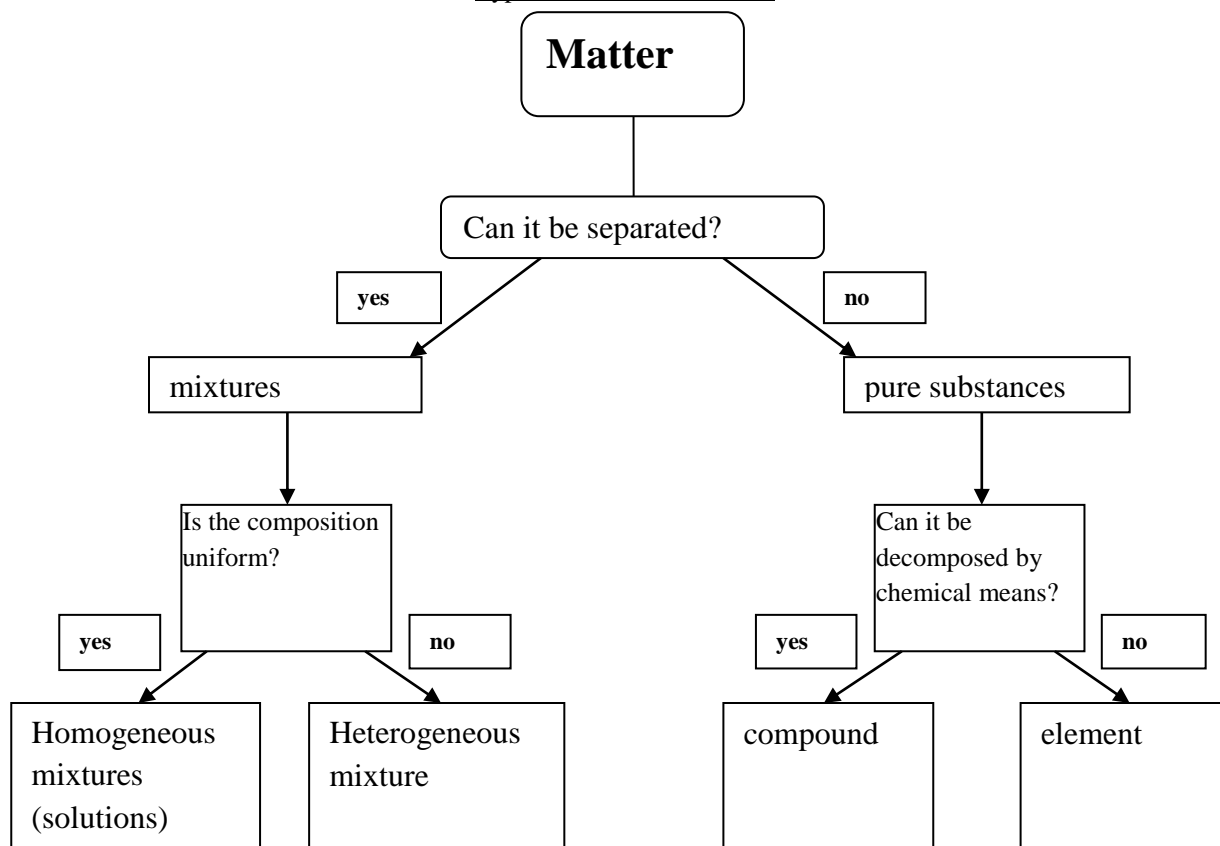
#### Tables:

##### Old Names for Elements

Elements with Symbols Based on Older Names		
Modern Name	Symbol	Older Name
antimony	Sb	stibium
copper	Cu	cuprum
gold	Au	aurum
iron	Fe	ferrum
lead	Pb	plumbum
mercury	Hg	hydrargyrum
potassium	K	kalium
silver	Ag	argentum
sodium	Na	natrium
tin	Sn	stannum
tungsten	W	wolfram

Diagrams:

Types of Matter Flow Chart



Periodic Table

46 <b>Pd</b> Palladium 106.42																	
1	2											13	14	15	16	17	18
1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg	3	4	5	6	7	8	9	10	11	12	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113	114	115	116	117	118
Lanthanides		58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu		
Actinides		90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr		

Non-metals, including Noble Gases
  Main Group Metals
  Transition Metals
  Metalloids

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