

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 | |

Videos

- Atoms and Molecules (Bozeman)
- Properties of Matter (Bozeman)
- Physical Change (Bozeman)
- Introduction to Chemistry (Khan)
- States of Matter (Khan)
- What's All the Matter? Atoms and Molecules (MIT)

Formulas/Conversion Definitions/Diagrams

Formulas

density = mass \div volume, $d = m/V$ (label: (g) = g/L, (l) = g/mL, and (s) g/cm³ or g/mL)

Drawings:

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

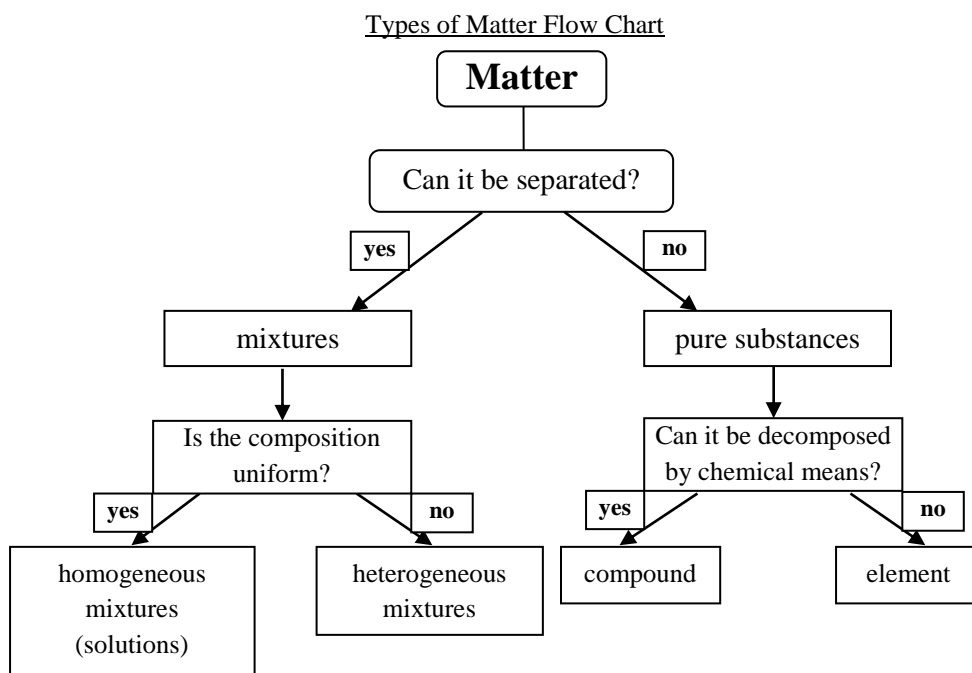
Matter Flow Chart Activity: Key Words (pure substances, matter, mixtures, elements, compounds, homogeneous mixtures, separates upon standing, never separates, uniform, atom, molecule, heterogeneous mixtures, chemically combined, metals-nonmetals-metalloids and solutions)

Tables:

Old Names for Elements

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

Diagrams:



Periodic Table

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

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

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Self-Assessment

- Chemistry and Matter
- Elements and Compounds
- Mixtures
- Properties of Matter
- Changes in Matter