

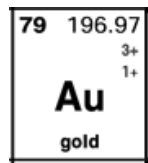
Topic 3: Classifying Matter

Matter

Pure Substance
 A _____ substance contains only _____ type of _____. Every piece looks the _____ as every other piece.

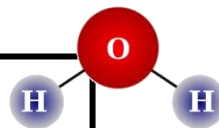


Mixture
 A _____ contains _____ or more types of _____. Particles may look the _____ or _____



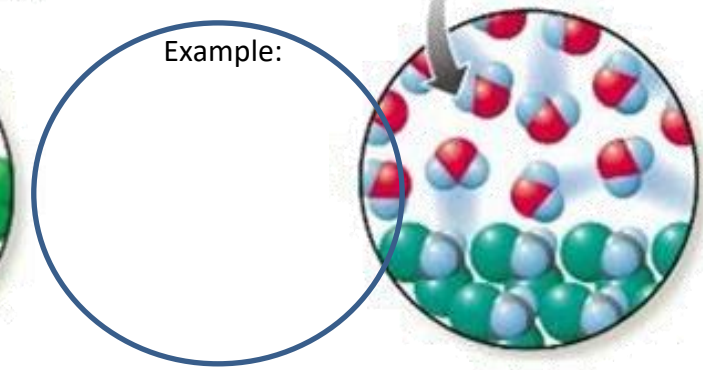
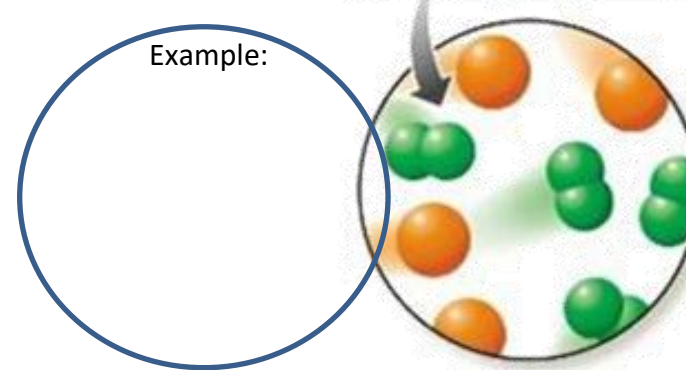
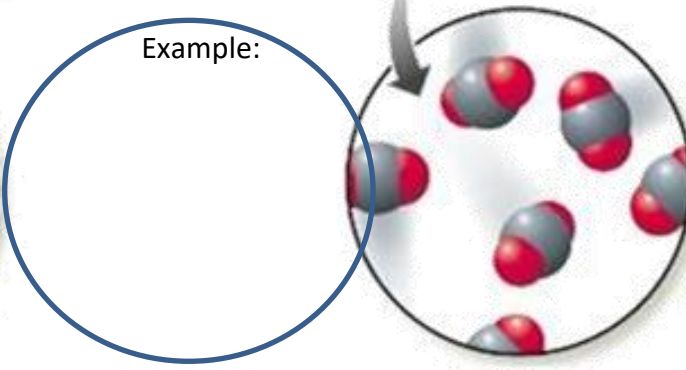
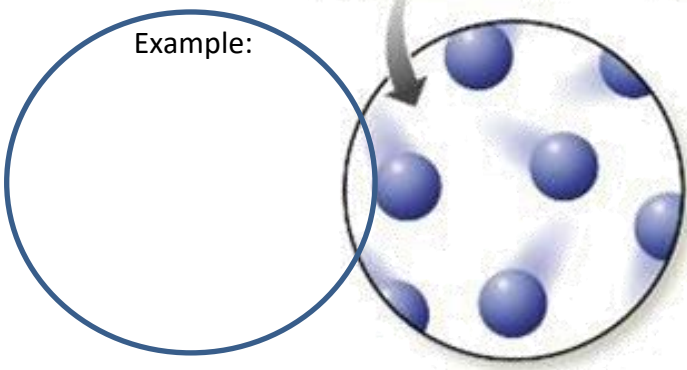
Element
 An _____ is made of only one type of _____. Atoms are the _____ particles of matter. Atoms are even smaller than _____.

Compound
 A _____ is made of _____ or more atoms chemically _____ together.



Solution
 A _____ looks like a pure substance but it is _____. Usually, a solution is made of _____ with another chemical _____ in.

Mechanical Mixture
 A _____ mixture is one in which you can easily _____ the _____ parts.



Periodic Table of Elements

Name: _____

1												18						
1	1.01 H hydrogen 1+											2	4.00 He helium —					
2	3 6.94 Li lithium 1+	4 9.01 Be beryllium 2+											5 10.81 B boron 3+	6 12.01 C carbon —	7 14.01 N nitrogen 3-	8 16.00 O oxygen 2-	9 19.00 F fluorine 1-	10 20.18 Ne neon —
3	11 22.99 Na sodium 1+	12 24.31 Mg magnesium 2+	3	4	5	6	7	8	9	10	11	12	13 26.98 Al aluminum 3+	14 28.09 Si silicon —	15 30.97 P phosphorus 3-	16 32.07 S sulfur 2-	17 35.45 Cl chlorine 1-	18 39.95 Ar argon —
4	19 39.10 K potassium 1+	20 40.08 Ca calcium 2+	21 44.96 Sc scandium 3+	22 47.87 Ti titanium 3+	23 50.94 V vanadium 4+	24 52.00 Cr chromium 2+	25 54.94 Mn manganese 4+	26 55.85 Fe iron 2+	27 58.93 Co cobalt 3+	28 58.69 Ni nickel 3+	29 63.55 Cu copper 1+	30 65.39 Zn zinc 2+	31 69.72 Ga gallium 3+	32 72.64 Ge germanium 4+	33 74.92 As arsenic 3-	34 78.96 Se selenium 2-	35 79.90 Br bromine 1-	36 83.80 Kr krypton —
5	37 85.47 Rb rubidium 1+	38 87.62 Sr strontium 2+	39 88.91 Y yttrium 3+	40 91.22 Zr zirconium 4+	41 92.91 Nb niobium 3+	42 95.94 Mo molybdenum 6+	43 (98) Tc technetium 7+	44 101.07 Ru ruthenium 4+	45 102.91 Rh rhodium 3+	46 106.42 Pd palladium 4+	47 107.87 Ag silver 1+	48 112.41 Cd cadmium 2+	49 114.82 In indium 3+	50 118.71 Sn tin 2+	51 121.76 Sb antimony 5+	52 127.60 Te tellurium 2-	53 126.90 I iodine 1-	54 131.29 Xe xenon —
6	55 132.91 Cs cesium 1+	56 137.33 Ba barium 2+	57-71	72 178.49 Hf hafnium 4+	73 180.95 Ta tantalum 5+	74 183.84 W tungsten 6+	75 186.21 Re rhenium 7+	76 190.23 Os osmium 4+	77 192.22 Ir iridium 4+	78 195.08 Pt platinum 2+	79 196.97 Au gold 1+	80 200.59 Hg mercury 2+	81 204.38 Tl thallium 3+	82 207.21 Pb lead 4+	83 208.98 Bi bismuth 5+	84 (209) Po polonium 4+	85 (210) At astatine 1-	86 (222) Rn radon —
7	87 (223) Fr francium 1+	88 (226) Ra radium 2+	89-103	104 (261) Rf rutherfordium —	105 (262) Db dubnium —	106 (266) Sg seaborgium —	107 (264) Bh bohrium —	108 (277) Hs hassium —	109 (268) Mt meitnerium —	110 (281) Uun ununillium —	111 (272) Uuu unununium —	112 (285) Uub ununbium —		114 (289) Uuq ununquadium —		116 (289) Uuh ununhexium —		

Atomic number: 29

Atomic mass: 63.55

Element Symbol: Cu

Element Name: copper

Charges: 2+, 1+

INNER TRANSITION ELEMENTS

6	Lanthanoids	57 138.91 La lanthanum 3+	58 140.12 Ce cerium 3+	59 140.91 Pr praseodymium 3+	60 144.24 Nd neodymium 3+	61 (145) Pm promethium 3+	62 150.36 Sm samarium 2+	63 151.96 Eu europium 2+	64 157.25 Gd gadolinium 3+	65 158.93 Tb terbium 3+	66 162.50 Dy dysprosium 3+	67 164.93 Ho holmium 3+	68 167.26 Er erbium 3+	69 168.93 Tm thulium 3+	70 173.04 Yb ytterbium 2+	71 174.97 Lu lutetium 3+
7	Actinoids	89 (227) Ac actinium 3+	90 232.04 Th thorium 4+	91 231.04 Pa protactinium 4+	92 238.03 U uranium 4+	93 (237) Np neptunium 5+	94 (244) Pu plutonium 6+	95 (243) Am americium 4+	96 (247) Cm curium 3+	97 (247) Bk berkelium 4+	98 (251) Cf californium 3+	99 (252) Es einsteinium 3+	100 (257) Fm fermium 3+	101 (258) Md mendelevium 2+	102 (259) No nobelium 2+	103 (262) Lr lawrencium 3+

*Based on carbon-12
 () Indicates mass of most stable isotope
 †At 101.235 kPa and 298.15K