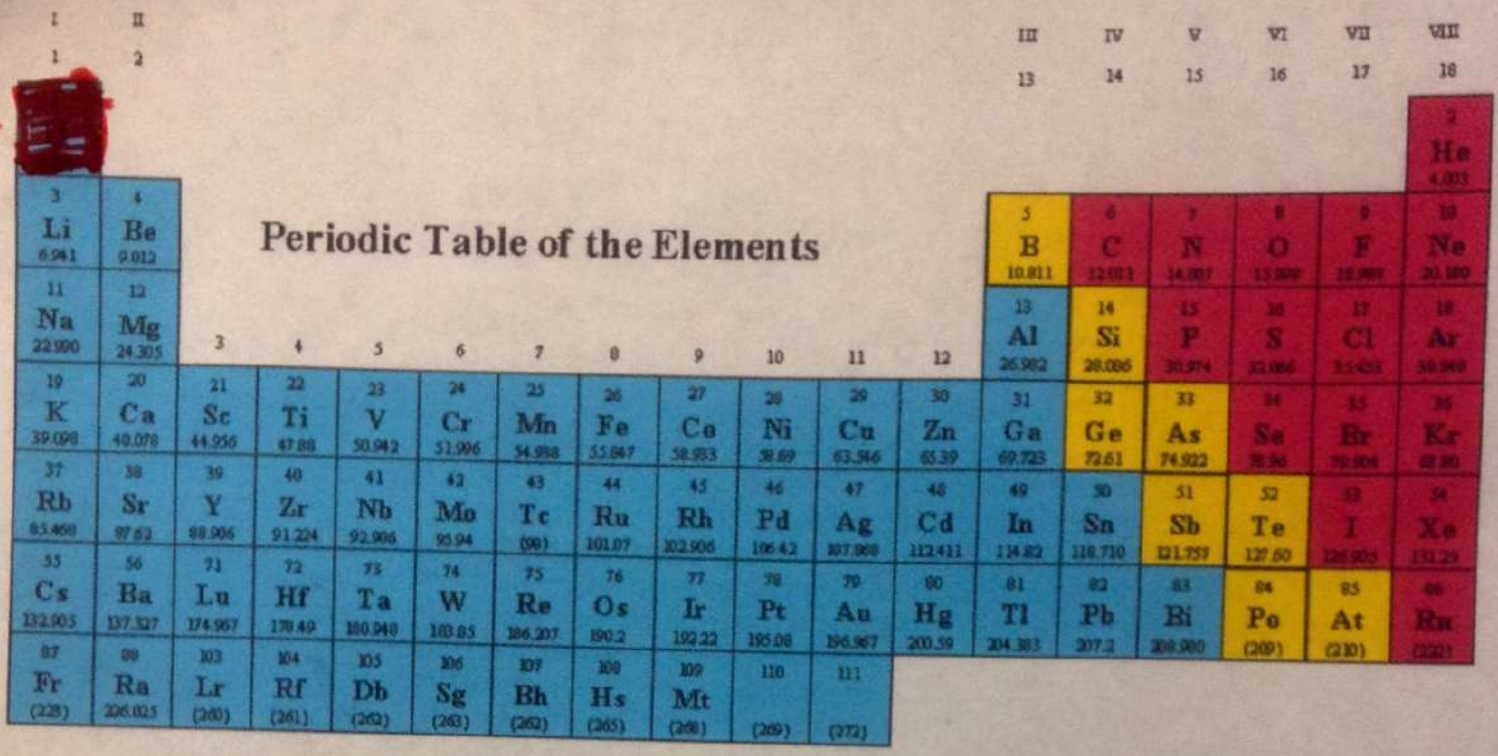
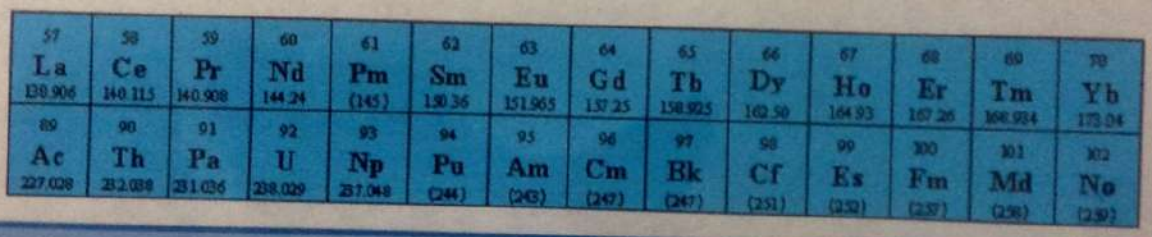
Station #4: Component of Compounds—Metals and Nonmetals





Using the periodic table above (blue = metals, yellow = metalloids, and pink = nonmetals) and the list of ionic/covalent compounds below, explore some of the rules of covalent bonds and ionic bonds.

Ionic

NaCl

$MgBr_2$

$NaNO_3$

Caf_2

Cs_2O

KI

Covalent

H_2O

NO_2

BrCl

PO_4

CO_2

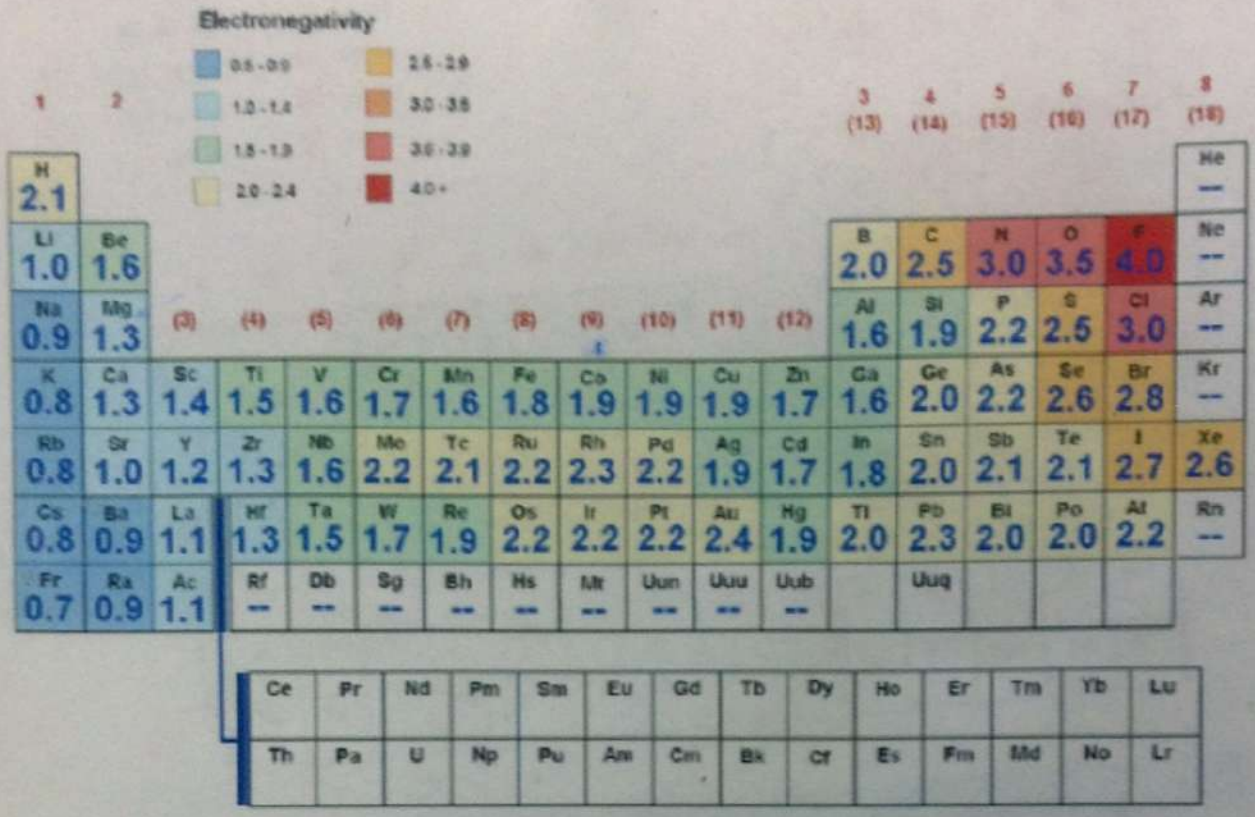
$C_6H_{12}O_6$

Station #~~6~~ 7: Melting Points

Melting Points of Some Ionic and Covalent Compounds			
Ionic compound	Melting Point of Ionic Compounds	Covalent Compound	Melting Point of Covalent Compounds
NaI	660 ^{0}C	NCl_3	-40 ^{0}C
KBr	734 ^{0}C	H_2O	0 ^{0}C
NaBr	747 ^{0}C	O_3	-192 ^{0}C
$CaCl_2$	782 ^{0}C	P_4O_6	23.8 ^{0}C
CaI_2	784 ^{0}C	SO_2	-72 ^{0}C
NaCl	801 ^{0}C	OCl_2	-20 ^{0}C
MgO	2852 ^{0}C	HNO_3	-42 ^{0}C

The chart above indicates the melting points of various ionic compounds and covalent compounds. Use the data to complete the *observations* section in your lab record sheet. Observe the differences in melting points between ionic compounds and covalent compounds. Write a claim which indicates whether the melting points of ionic compounds tend to be higher or lower than covalent compounds and justify your claim using evidence.

Station #6: Differences in Electronegativity Values



Using the Periodic table of electronegativity values above, find the *difference in electronegativity* (substract) for each of the compounds and place into the observations section of your lab. (Note: Ignore the subscripts. Focus only on the elements.) Determine any generalizations that you can make regarding the differences of electronegativity values among ionic vs. covalent.

Ionic	Covalent
NaCl	NO_2
$MgBr_2$	BrCl
NaF	SO_2
CaF_2	PO_4
Cs_2O	CO_2