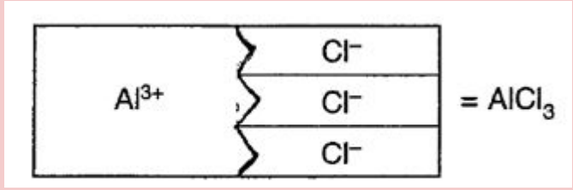
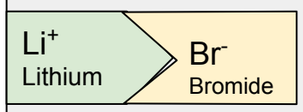
Ion Puzzle Instructions: Use the ion pieces on the right to assemble the ionic compounds below. Make sure each compound makes a rectangle. Write the formula of the compound based on the pieces you used to make it. Below is an example.

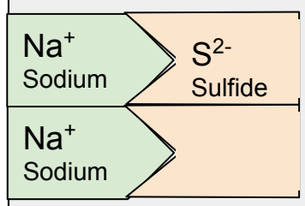


Lithium Bromide



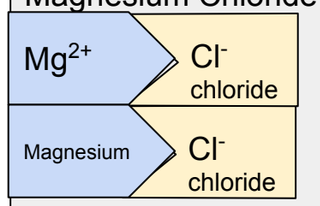
Formula:

Sodium Sulfide



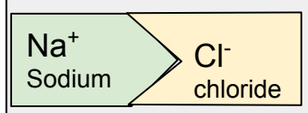
Formula:

Magnesium Chloride



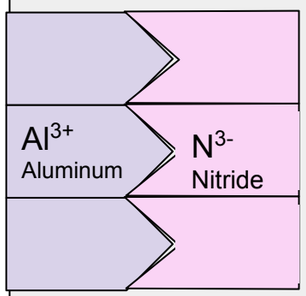
Formula:

Sodium Chloride



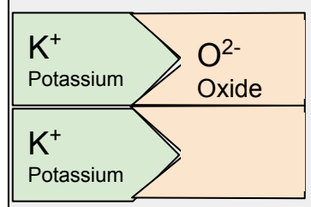
Formula:

Aluminum Nitride



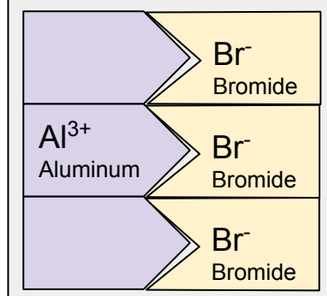
Formula:

Potassium Oxide



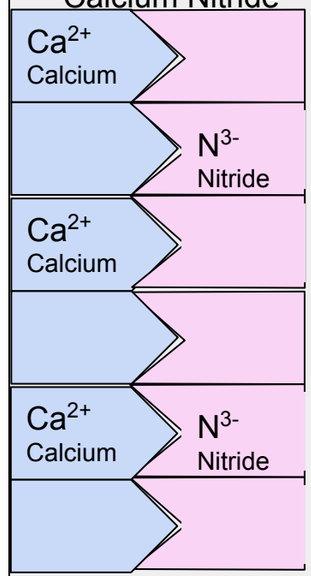
Formula:

Aluminum Bromide



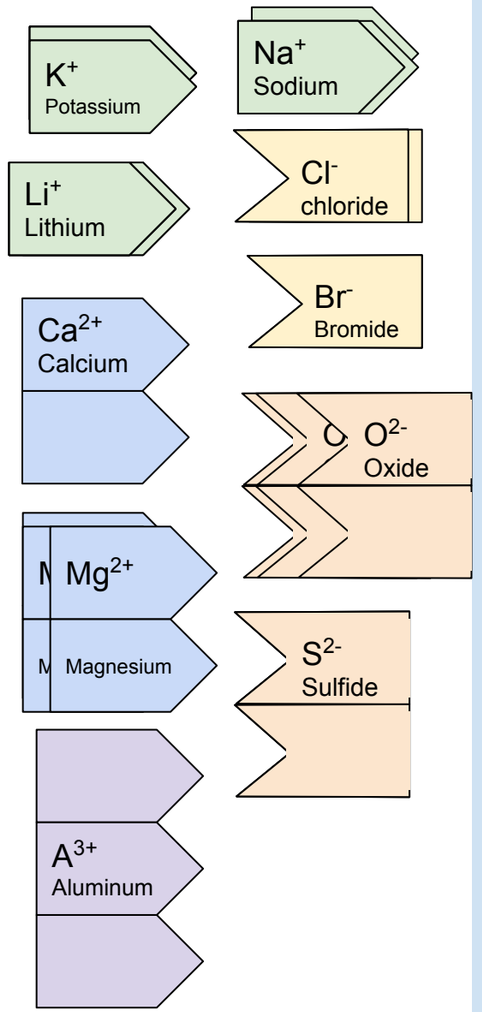
Formula:

Calcium Nitride



Formula:

Ion Puzzle Pieces



Follow – Up Questions:

1. Do metals form anions or cations? _metals_
2. What is the charge for all elements in Group 1A? _+1_
   What is the charge for all elements in Group 2A? _+2_
   What is the charge for all elements in Group 7A? _-1_
   Do you notice a pattern in the charge for elements in each group? _yes - the A groups have a pattern to their charges._
   Explain. _Elements with less than 4 valence electrons will lost all valence electrons. For example, elements in group 2A have 2 valence electrons and lose those 2 valence electrons forming +2 ions. Elements with more than 4 valence electrons will gain electrons until they gain 8 (an octect). For example, elements in group 6A have 6 valence electrons and will gain 2 more electrons (6+2=8) forming -2 ions._(Hint: relate to number of valence electrons and the octet rule)
3. Can an ionic compound ever consist of a cation-cation or anion-anion bond? _No_
   Explain. _You must have a + (cation) and a - (anion) for an ionic compound_
4. When naming a binary compound (made from one metal and one nonmetal), what ending do you use to represent anions? _=ide_
   What is the overall charge of ionic compounds? _zero (charges cancel out)_