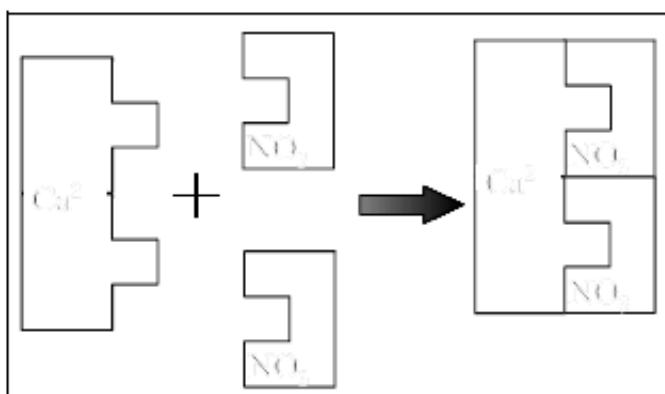
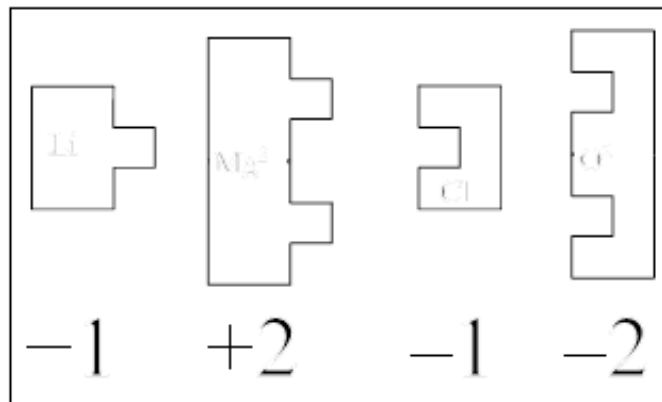


Lab: Ionic Puzzle Pieces

Background:

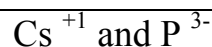
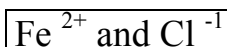
The formulas of ionic compounds can be determined by making sure their oxidation states (charges) add up to zero (neutral). This can be more easily visualized with puzzle pieces. An element with an oxidation state of +1 is represented by a puzzle piece with one tab jutting out (representing the electron it wants to lose). An element with an oxidation state of +2 is represented by a puzzle piece with two tabs jutting out, and so forth. On the other hand, elements with negative oxidation states have indentations representing the electron(s) they want to gain. An element with an oxidation state of -1 has one indentation, -2 has 2 indentations, and so on. (See diagram to the right)



To get the correct formula for a compound, the puzzle pieces for the ions need to be put together so there are no tabs or indentations left over (see diagram to the left). Putting the pieces together in this way makes the **positive charge equal and opposite to the negative charge, giving the compound a total charge of zero.**

Directions:

1. Use the puzzle pieces provide to assemble the ionic compounds listed on the following pages.
2. In the box provided, draw the model of the compound you made.
3. Based on the model, write the formula of the compound also in the box provided.



Fe^{3+} and Cl^{-1}	Mg^{+2} and N^{-3}
Ag^{+} and Cl^{-}	Ag^{+} and S^{-2}
Mg^{2+} and O^{2-}	Ca^{2+} and F^{-1}
Al^{+3} and As^{3-}	Al^{+3} and S^{-2}