

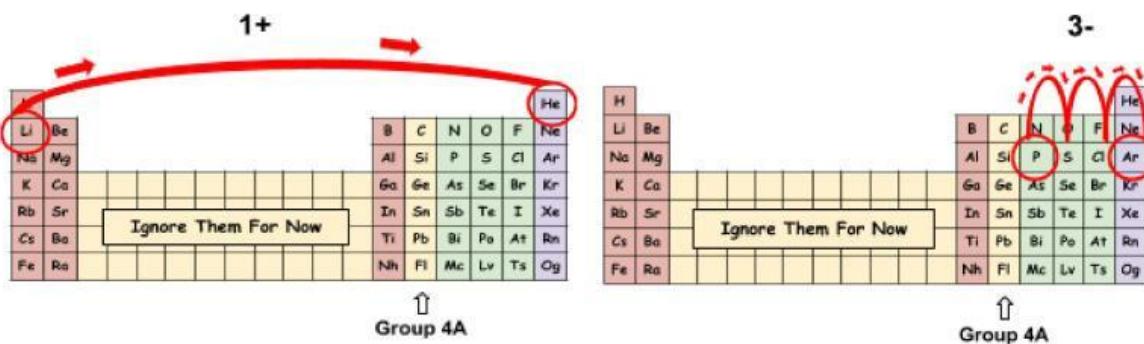
Finding Charges Worksheet

Directions: Use the following information to complete the table below.

How do we find charges?

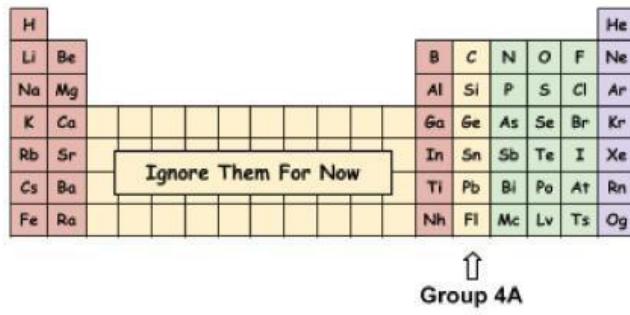
- Elements will gain or lose electrons to have the same number of electrons as the nearest noble gas. This happens because noble gases have a full outer shell of electrons (8), and are very chemically stable.
- Elements to the left of group 4A (14) will lose one electron for every element until they reach the nearest noble gas.
- Elements to the right of group 4A (14) will gain one electron for every element until they reach the nearest noble gas.
- The "Charge" comes from the imbalance in the total number of protons and electrons due to the loss or gain of electrons.

Example:



| Element | Closest Noble Gas | Will the element gain or lose electrons | # of Electrons Gained or Lost | Charge | Type of Ion |
|---------|-------------------|---|-------------------------------|--------|-------------|
| Li | He | Lose | 1 | 1+ | Cation |
| P | Ar | Gain | 3 | 3- | Anion |

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| Element | Closest Noble Gas | Will the element gain or lose electrons | # of Electrons Gained or Lost | Charge | Type of Ion |
|---------|-------------------|---|-------------------------------|--------|-------------|
| Be | | | | | |
| Rb | | | | | |
| K | | | | | |
| Al | | | | | |
| O | | | | | |
| Cl | | | | | |
| B | | | | | |
| Se | | | | | |
| N | | | | | |
| F | | | | | |
| I | | | | | |
| Cs | | | | | |
| Mg | | | | | |
| S | | | | | |