Guided notes- Bonding #2

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| Chemical Bonds  Ionic Bonds  Example  Practice  Review- Guided Notes #1 & 2 | These attractions between atoms \_\_\_\_\_\_\_\_\_\_\_\_ molecules together.  We will be learning about ionic and covalent bonds, but there are more.  *Ionic b*onds are formed by the electrostatic attraction after the complete \_\_\_\_\_\_\_\_\_\_\_\_\_ of an electron from a cation to an anion.  The \_\_\_\_\_\_\_\_\_\_ atom attracts the electrons because it is much more electronegative than the cation atom.  Example- An ionic compound salt (e.g. [NaCl](http://iws.collin.edu/biopage/faculty/mcculloch/1406/outlines/chapter%202/2-12.JPG) or table salt).  [https://encrypted-tbn2.gstatic.com/images?q=tbn:ANd9GcRkHVj-SI0oMbZpsJb1IuiSNIjY0lWLfgI4sHd060lDERb7q_dbUw](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=fU8F9lVqZUVJlM&tbnid=KSEm6TkHgnu1tM:&ved=0CAUQjRw&url=http://www.geo.arizona.edu/xtal/geos306/fall13-3.htm&ei=MlOlUojQKuT8yAHz_4GwAQ&bvm=bv.57752919,d.aWc&psig=AFQjCNFz504eRXWs7RdZC7tJCQVC5hTeiQ&ust=1386652834731878)  \*The Na atom (a cation) \_\_\_\_\_\_\_\_\_\_\_ the Cl atom (an anion) it’s one valence electron.  \*\*The right picture shows how BOTH the Na atom and the Cl now have \_\_\_\_\_\_\_\_\_\_\_ valence shells. Both are now \_\_\_\_\_\_\_\_\_\_\_\_\_ and complete.  *Practice:* Mg would like to “give away” its two valence electrons. What group would be a good suggestion? \_\_\_\_\_\_\_\_\_\_\_\_\_  Br would like to have a full valence shell. Who could Br “take an electron” from? \_\_\_\_\_  [https://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcQLsYOk--1uv8ZtA9pqTPKKC7KQq1NDzUw57UqsAuv7FNEk0KkDqw](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&frm=1&source=images&cd=&cad=rja&docid=UE5hrYwnRm76qM&tbnid=euEpDB-2IHhtIM:&ved=0CAUQjRw&url=http://chemistry.about.com/od/chemistryjokes/ig/Chemistry-Cat/Chemistry-Cat---007.htm&ei=zW6lUp6_MoWCyQHviIHwDQ&bvm=bv.57752919,d.aWc&psig=AFQjCNF2p6--fRRJwNjhzZVK5j5RcYSeJg&ust=1386659884610718) \*\*Remember “I”onic bond. It gives and takes, but  does NOT share.  **Review:**   |  |  |  |  | | --- | --- | --- | --- | | Electrons charge- | Octet rule/goal- | Cation- (group #s) | Anion- (group #s) | | Valence electrons- (location)- | Always stable group- | Types of elements (cations)- | Types of elements (anions)- | |

Name

Period

Date

Lewis Dot Diagrams (Ionic Bonding)

*Instructions: Draw the Electron Dot Diagrams for the following elements.*

|  |  |  |
| --- | --- | --- |
| **Cations:** (use one color or x’s) | **Anions:** (use another color or o’s) | **Ionic Bonds:** (use your two different colors or your x’s and o’s when bonding) Make a FULL valence shell. |
| 1 Li | F | LiF |
| 2 Mg | S | MgS |
| 3 Al | N | AlN |
| 4 Na | Cl | NaCl |

*Instructions: Answer the following multiple choice and fill-in-the-blank questions using your guided notes (if needed).*

5 When an atom has a full valence shell it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (stable or unstable) atom.

6 How many electrons does a “full” valence shell have?

7 Which group always has a full valence shell?

8 Group numbers \_\_\_\_, \_\_\_\_, and \_\_\_\_ are usually cations.

9 Cations \_\_\_\_\_\_\_\_\_ (give or receive) electrons.

10 Groups numbers \_\_\_\_, \_\_\_\_, and \_\_\_\_\_ are usually anions.

11 Anions \_\_\_\_\_\_\_\_\_ (give or receive) electrons.

12 Which of the following atoms is more likely to LOSE one or more electron? K, F, B, or Ne

13Which of the following atoms is more likely to GAIN one or more electrons? K, F, B, or Ne

14 Which of the following atoms is a stable atom? K, F, B, or Ne

15 If electrons are being lost and gained, explain what happens to the charge of the once neutral atom.