Teacher’s Notes

**Creating Compounds**

**There are two types of compounds: Ionic and covalent**

* One of the easiest ways to know which type of compound it is is by looking at what it’s made out of

 **Metal and Non-metal = Ionic**

 **2 or More Non-metals = Covalent**

*Quick reminder…*



For this class we are just going to focus on **ionic compounds**…

**Ionic Compounds are composed of ions.**

* Cation – has a positive charge
* Anion – has a negative charge

\*Remember **opposites** attract! Because an ionic compound is created out of a **cation** and **anion** they end up being **neutral** (having no charge). In order to be neutral the charges of each ion must **cancel** **or balance** each other out.

Video break… <http://youtu.be/wWUYHHo-zB0>

*Let’s brush up quick on our Lewis dot structures…*



* Lewis dot structures show the outer most valence electrons only. The “magic” number is 8 to be stable (with the exception of hydrogen, who only needs 2 for its first level)
* Remind them where metals and non-metals are in general
* Based on the Lewis dots we can also easily determine charges (label them above)

So atoms want to be **stable**… in order to form a stable compound they must bond together with other atoms that have “**needs**” that complement each other.

**Rules to remember…**

1) Ionic Compounds always have a metal and non-metal

2) The metal is always listed first when writing out the formula

OK let’s get practicing… If I have magnesium and chlorine… what kind of compound would they make?

**Step 1:** Draw out the Lewis dot structures for each

**Step 2**: Determine what each element “wants” to do in order to be stable, in order to get that… how many of each will it need?

**Step 3:** Based on their wants... write out the chemical formula using subscripts to tell how many of each element are needed.

Ok… let’s take a break and watch this video to see it another way… <http://youtu.be/5IJqPU11ngY>

Let’s try another one… what if I have potassium and sulfur… what kind of compound would they make?

**Step 1 and 2:**

**Step 3:** What’s the compound?

**Your Turn… Figure out what kind of compound the following would make, show your work below and put a box around the compound formula you come up with.**

1. Barium and Chlorine
2. Magnesium and Oxygen
3. Sodium and Sulfur
4. Potassium and Sulfur
5. Calcium and Oxygen
6. Sodium and Bromine
7. Barium and Iodine
8. Potassium and Iodine

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Assignment: 2

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 **Metal and Non-metal =**

 **2 or More Non-metals =**

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*
*

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2)

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6. Sodium and Bromine
7. Barium and Iodine
8. Potassium and Iodine
9. Francium and Oxygen
10. Magnesium and Fluorine

REVIEW: More Practice Reading a Chemical Formula

|  |  |  |  |
| --- | --- | --- | --- |
| Given | Mg3(PO4)2 | 4Al2(SO4)3 | 2Na2SO4 |
| Atomic Tally | Total # of Atoms = | Total # of Atoms = | Total # of Atoms = |