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| CHEMISTRY | CODE: SCS21A |
| 2014-2015 SCHOOL YEAR | INSTRUCTOR: Ms. Bui |
| CLASSROOM: 510 | LAB ROOM: 506 |

**CHEMICAL BONDS**

**TYPES OF BONDS**

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| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Period: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Subject: Chemistry |

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| **Standards:**   * 5.2g - Two major categories of compounds are ionic and molecular (covalent) compounds. * 5.2a - Chemical bonds are formed when valence electrons are:   + Transferred from one atom to another – ionic.   + Shared between atoms – covalent.   + Mobile in a free moving “sea” of electrons – metallic. |

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| **SCIENCE STARTER**  1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: An atom or molecule in which the total number of electrons is not equal to the total number of protons.  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: a positively charged ion  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: a negatively charged ion |

**Vocabulary:**

1. Covalent bond – bond in which one or more pairs of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are \_\_\_ \_\_\_\_\_\_\_ by two atoms
2. Ionic bond – bond in which one or more pairs of \_\_\_ \_\_\_\_\_\_\_\_\_\_\_ are removed and attached to another atom, resulting in \_\_\_\_\_\_\_\_\_\_ and \_\_ \_\_\_\_\_\_\_\_\_\_\_ which attract each other.
3. Diatomic atoms – atoms comprising of \_\_\_\_\_\_\_\_ atoms comprising of the \_\_\_\_\_\_\_\_\_ element.
4. 7 diatomic atoms (HNFOICB):
5. Metallic bond – bond in which the metals atoms move \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in all directions, given rise to “positive \_\_\_\_\_\_\_\_\_\_\_in a sea of \_\_\_\_ \_\_\_\_\_\_\_\_”

**Part 1: Ionic bonding (between metals and nonmetals)**

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| **Compound** | **Lewis Dot Structure** |
| KBr |  |
| CaCl2 |  |
| LiF |  |
| MgI2 |  |

**Part 2: Covalent bonding (between nonmetals and nonmetals)**

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| **Compounds** | **Lewis Dot Structure** |
| NH3 |  |
| N2H4 |  |
| N2H2 |  |
| F2 |  |

**Question:**

**1.** What is the difference between an ionic bond and a covalent bond?

2. What charge will a Group 2 cation have?

3. What charge will a Group 16 anion have?

4. What charge will a Group 15 anion have?

5. What is the total number of valence electrons for KBr?

6. What is the total number of valence electrons for F2

7. Predict whether ionic or covalent if the following elements bond with oxide.

* Sodium
* Magnesium
* Aluminum
* Silicon
* Phosphorus
* Sulfur

**AIM Prompt: What type of bond exists between NaCl? State your claim and provide evidence.**

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