IONIC & COVALENT BONDS

Name: Date: Period:

An _____ is the attraction between two oppositely charged ions. The chemical bond formed when two atoms share electrons is called a _____. Covalent bonds usually form between atoms of ____ and ionic bonds usually form when a ____.

Activity A: How Do Ions Form?

Procedure:

- Place three pairs of checkers (three red and three black) on your desk. The red represent electrons and the black represent protons.
- Place nine pairs of checkers (nine red and nine black) in a separate group on your desk.
- 3. Move a red checker from the smaller group to the larger group.
- 4. Count the number of positive charges (protons) and negative charges (electrons) in each group.
- Now sort the checkers into a group of four pairs and a group of eight pairs. Repeat Steps 3 and 4, this time moving two red checkers form the smaller group to the larger group.

Think it over

- 1. What was the total charge on each group before you moved the red checkers (electrons)?
- 2. What was the charge on each group after you moved the checkers?
- 3. Based on this activity what do you think happens to the charge on an atom when it loses electrons?
- 4. Based on this activity what do you think happens to the charge on an atom when it gains electrons?

Activity B: Interpreting Data About Ions

Procedure:

- Use the periodic table and the chart to the right to identify the charges of the ions in each ionic compound listed below.
- 2. Write the formulas for each compound.
 - a. sodium beomide:
 - b. lithium oxide:
 - c. magnesium sulfide:
 - d. aluminum fluoride:
 - e. potassium nitrate:
 - ammonium chloride

Ions and Their Charges		
Name	Charge	Symbol or Formula
Lithium	1+	Li*
Sodium	1.+	Na"
Potassium	1+	K*
Ammonium	1+	NH ₄ *
Calcium	2+	Ca ² *
Magnesium	2+	Mg ²⁺
Aluminum	3+	Al ³ *
Floride	1-	F.
Chloride:	1-	CT
Iodide	11-	
Bicarbonate	11-	HCO ₃
Nitrate	1-	NO ₃
Oxide	2-	O ²
Sulfide	2-	S2-
Carbonate	2-	CO ₃ 2.
Sulfate	2-	SO_4^{-2}
Phosphate	3-	PO ₄ ³

Think it over:

1. How do you know how many of each ion to write in the formula?

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Daniel F McAuley

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