Date _____ Name _____

Section _____ Team _____

Instructor _____ _____

Pre-Lab Study Questions

1. How can the presence of an ion in a solution be detected?

2. What tests would you use to identify a solution of Ag_3PO_4?

3. What tests would you use to identify a solution of $FeCl_3$?

4. A flame test of a colorless solution gives a bright yellow color. When reacted with $AgNO_3$ a white precipitate forms that dissolves when HNO_3 is added. When HCl is added to the unknown solution, bubbles form. What is the compound in the colorless solution?

Date _____ Name _____

Section _____ Team _____

Instructor _____

REPORT SHEET

Testing for Cations and Anions

1. Unknown solution number _____

A. Flame Tests for K^+, Ca^{2+}, and Na^+ ions

Cation Tested	Color produced
2. K^+	
3. Ca^{2+}	
4. Na^+	
5. Unknown	

6. From your test results, does your unknown contain K^+, Ca^{2+}, or Na^+, or none of these?

_____

Explain your choice.

B. Tests for Ammonium Ion, NH_4^+, and Iron(III) Ion, Fe^{3+}

Cation	Test Results (Known)		Test Results (Unknown)	
	Odor	Litmus	Odor	Litmus
1. NH_4^+				
2. Fe^{3+}				

3. From your test results, does your unknown contain NH_4^+ or Fe^{3+}, or *none* of these?

_____

Explain your choice.

C. Tests for Negative Ions (Anions)

Anion	Observations (Known)	Observations (Unknown Solution)
1. Cl^-		
2. SO_4^{2-}		
3. PO_4^{3-}		
4. CO_3^{2-}		

5. Identification of the negative ion in the unknown solution

From your test results, what negative ion (anion) is present in your unknown? _____

Explain your choice.

D. Writing the Formula of Your Unknown Salt

1. Cation _____ Name _____

   Anion _____ Name _____

2. Formula of your unknown salt _____
3. Name of your unknown salt _____

E. Testing Consumer Products for Some Cations and Anions

Product tested _____

Cation tests	Observations	Ion(s) present
Flame tests (Na^+, K^+, Ca^{2+})		
NH_4^+		
Fe^{3+}		
Anion tests		
Cl^-		
SO_4^{2-}		
PO_4^{3-}		
CO_3^{2-}		