Chemical Reactions Introduction: The Switching Game

Pre-Lab:

1. Write the reaction for two solutions of aluminum nitrate and sodium hydroxide mixed together.

Chemicals:

Vertical Columns:	Horizontal Rows:	
Al(NO ₃) ₃	NaCl	
$Ca(NO_3)_2$	NaOH	
AgNO ₃	NaI	
$Zn(NO_3)_2$	Na ₃ PO ₄	

Procedure:

- 1. Obtain a well testing plate, place it on white paper, and label as instructed.
- 2. Obtain one of the solutions labeled under the horizontal chemicals
- 3. Using the dropper, place 4-5 drops of the solution in the first four wells of that row.
- 4. Repeat this procedure with the next 3 chemicals
- 5. Now, using one of the chemicals listed in the <u>vertical</u> column, place 4-5 drops in the first well.
- 6. If a precipitate forms (solid), write PPT in the data table (use a toothpick if unclear)
- 7. If no reaction, record NR
- 8. Continue with the same chemical down the column, recording as you go.
- 9. Repeat with the other 3 chemicals
- 10. Clean up as instructed.

Data Table:

	Al(NO ₃) ₃	$Ca(NO_3)_2$	AgNO ₃	$Zn(NO_3)_2$
NaCl				
NaOH				
NaI				
Na ₃ PO ₄				

Data Analysis:

- 1. Which substances seemed to react with each other?
- 2. Which substance reacted with the most chemicals?
- 3. Did any of the chemicals not react? Which ones?
- 4. List any problems that occurred during the lab.

Post Lab:

- 1. List any similarities between chemicals in the vertical group/horizontal group.
- 2. Define the term soluble.
- Sodium compounds and nitrate compounds are always soluble. For the reactions that gave a precipitate, write the formula for it.
 Summarize the experiment in one paragraph.