Modeling Ionic Reactions

First:

- Finish the word equation. Write ion charges above each ion.
- Write a chemical equation for the process using proper chemical formulas.
- Use (aq) after each chemical that is dissolved in the solution. For this activity, the first two compounds will be soluble. Use (s) after any ionic compound that would be a precipitate.
- Put coefficients in front of the compounds as necessary to create a balanced chemical equation.

Then:

- Write a color code to designate which color represents each ion.
- On the desk, model the reactants by using one chip per ion. Place these on your “Reactant” papers. Use the coefficients to see how many of each compound to make.
  - Draw your desk model in the reactant boxes in the packet (with color).
- “Pour” both of your reactants into the beaker (onto the beaker paper).
- Model the reaction products by rearranging the chips in the paper beaker to represent the new way that the products are bonded. Place any solids at the bottom of the beaker as connected ions. Leave soluble compounds in their separated ion form “floating around” because they are more attracted to the water than to each other.
  - Draw your desk model in the beaker in the packet (with color).
1. Lithium sulfide + silver nitrate

Reactant + Reactant $\rightarrow$ Products in beaker

2. Barium chloride + sodium carbonate

Reactant + Reactant $\rightarrow$ Products in beaker
3. Aluminum sulfate + sodium phosphate →

4. Barium chloride + hydrogen phosphate →
5. Potassium sulfate + magnesium fluoride $\rightarrow$

\[ \text{Reactant} + \text{Reactant} \rightarrow \text{Products in beaker} \]

6. Aluminum chloride + lead (II) nitrate $\rightarrow$

\[ \text{Reactant} + \text{Reactant} \rightarrow \text{Products in beaker} \]
7. Sodium sulfate + ammonium iodide →

8. Lithium phosphate + barium chloride →
9. Aluminum bromide + ammonium phosphate →

10. Zinc nitrate + barium hydroxide →
REACTANT

REACTANT