Success Criteria: complete each level before moving onto the next

- Basic: write **word equations** for the following precipitation reactions
- Proficient: write **symbol equations** for the following precipitation reactions
- Advanced: balance the **symbol equations** for the following precipitation reactions

Use your solubility rules to determine which product forms a precipitate and circle it.

1. sodium hydroxide solution and copper nitrate solution are mixed together.
   
   Word equation: sodium hydroxide + copper nitrate → sodium nitrate + copper hydroxide
   
   Symbol equation: \( 2\text{NaOH}(aq) + \text{Cu(NO}_3\text{)}_2(aq) \rightarrow 2\text{NaNO}_3(aq) + \text{Cu(OH)}_2(s) \)

2. magnesium sulfate solution and sodium hydroxide solution are mixed together.
   
   Word equation: magnesium sulfate + sodium hydroxide → magnesium hydroxide + sodium sulfate
   
   Symbol equation: \( \text{MgSO}_4(aq) + 2\text{NaOH}(aq) \rightarrow \text{Mg(OH)}_2(s) + \text{Na}_2\text{SO}_4(aq) \)

3. sodium carbonate solution and silver nitrate solution are mixed together.
   
   Word equation: sodium carbonate + silver nitrate → sodium nitrate + silver carbonate
   
   Symbol equation: \( \text{Na}_2\text{CO}_3(aq) + 2\text{AgNO}_3(aq) \rightarrow 2\text{NaNO}_3(aq) + \text{Ag}_2\text{CO}_3(s) \)

4. calcium chloride solution and sodium sulfate solution are mixed together.
   
   Word equation: calcium chloride + sodium sulfate → calcium sulfate + sodium chloride
   
   Symbol equation: \( \text{CaCl}_2(aq) + \text{Na}_2\text{SO}_4(aq) \rightarrow \text{CaSO}_4(s) + 2\text{NaCl}(aq) \)

5. lead nitrate solution and zinc chloride solution are mixed together.
   
   Word equation: lead nitrate + zinc chloride → lead chloride + zinc nitrate
   
   Symbol equation: \( \text{Pb(NO}_3\text{)}_2(aq) + \text{ZnCl}_2(aq) \rightarrow \text{PbCl}_2(s) + \text{Zn(NO}_3\text{)}_2(aq) \)

6. iron(II) nitrate solution and sodium hydroxide solution are mixed together.
   
   Word equation: iron(II) nitrate + zinc chloride → iron (II) chloride + zinc nitrate
   
   Symbol equation: \( \text{Fe(NO}_3\text{)}_2(aq) + \text{ZnCl}_2(aq) \rightarrow \text{FeCl}_2(s) + \text{Zn(NO}_3\text{)}_2(aq) \)