Chemistry Lab 5 proc

Opening Questions

a:

	$CH_3CO_2^-$	OH^-
Pb^{2+}	sol	prec
K^+	sol	sol

$2\,KOH(aq) + Pb(CH_3CO_2)_2(aq) -> 2\,K(CH_3CO_2^-(aq)) + Pb\,(OH^-)_2(s)$
I used the solubility table from Openstax to determine that hydroxide is not soluble except with group 1 elements (such as potassium), and would therefore be solid when bonded with lead.

b:

1. $Cu(SO_4) + Na_2(CO_3{}^{2-}) > Cu(CO_3{}^{2-}) + Na_2(SO_4)$
2. The student would know that at least one of the outputs is a solid, but they wouldn't know which one it is.
3. They would know that both outputs are liquid

Procedure

	$So_4{}^{2-}$	$PO_4{}^{3-}$	$NO_3{}^-$	Cl^-	$CO_3{}^{2-}$
Cu^{2+}	aq				
Na^+	aq	aq			aq
Ag^+			aq		
Ca^{2+}			aq		
$NH_4{}^+$				aq	
Ba^{2+}			aq		

Experimentally determine the solubility of each compound described in the chart by combining ionic solutions. Then, write out balanced net ionic chemical reaction equations for each precipitate. Recall that ionic reaction equations show only the

precipitate output, and none of the aqueous leftovers. Remember to include phase tags.

Mix plan

1. For the sulfates and phosphates, we can determine their solubility by mixing each unknown cation with the sodium compound containing the anion we are seeking to bond with, as we know that both sodium sulfate and sodium phosphate are aqueous
    1. For example, copper phosphate's solubility can be determined by mixing copper sulfate with sodium phosphate. If there is a precipitate, it will definitely be copper phosphate.
2. You may use this deduction along with the increased information from the table to determine the rest of the compounds
   Check results with an instructor

Part B: Carbonate

1. Add a drop of 6 M HCl to a drop of sodium carbonate solution and observe
2. Test this with another reaction that doesn't involve, 6 M HCl and sodium phosphate, and observe

Part C: Unkown ionic compounds

Do this after completing 1-4 in the analysis handout

1. The three "unknown" solutions are all soluble sodium salts. Mix them with other reagents and determine the identity of the salts
    1. Use results from A to determine the mix

SAFETY

1. 6M HCl is acidic. Use goggles and possibly gloves, or just tank it and end up standing under the shower thingy for 15 minutes
2. Silver nitrate may stain your skin

WASTE

This stuff is not good for the environment. Dump everything in the waste containers, use glass squares as they are easy to clean.