**Lab 3A - Determining Ksp (Teacher Notes/PreLab)**

Before this activity:

* Students are familiar with the solubility chart, and determining whether a substance is low or high solubility.
* Students have defined Ksp and done some mathematical work with Ksp.

Start this experiment with a demo.

Ask the question: Will a precipitate form when Pb(NO3)2 and KI are mixed?

* Students will typically use the solubility chart, and give a simplistic answer based on solubility 🡪 YES, it should precipitate.

The teacher has prepared two test tubes with the following:

Tube A: 0.002M Pb(NO3)2 🡪 2mL of 0.01M diluted to 10 mL

Tube B: 0.004M KI 🡪 2mL of 0.02M diluted to 10 mL

Combine these two reactants in a new container. NO PRECIPITATE WILL FORM.

Ask students: Why didn’t we see a precipitate? You predicted one…

It shouldn’t take too long before someone remembers that concentration is a key   
 factor in solubility.

Record the initial concentrations & volumes of reactants, and the result on the board.

Let’s test your explanation, and try the demo again. This time we’ll use

Tube C: 10mL of 0.01M Pb(NO3)2

Tube D: 10mL of 0.02M KI

Combine these two reactants. A precipitate WILL form.

Record these initial concentrations and the result on the board.

Remind students that the Ksp is the threshold between a precipitate and no precipitate.  
Tell them their task will be to design an experiment to answer the question: where is that line? ***What is the Ksp of lead (II) iodide?***