Most chemistry labs are of the "cookbook" style, the labs are a series of steps to perform in the alloted time and not much thought goes into the performance.  The other option is to give students a question and then give them free reign to design a lab.  Many of the students have no idea where to begin the design phase of a lab and end up just looking up a cookbook lab and trying to make it work.  The other problem with the free reign option is safety and logistics with the laboratory prep.  Is it a safe lab?  Do we have the chemicals, glassware, equipment?  This is why so many of the colleges and universities go to prescriptive lab experiences.

Our solution is to have a prelab for each lab.  The prelab consists of a writing assignment the student must perform before the get into the lab.  This writing assignment will help them understand what they are trying to accomplish.

The writing assignment will be in the carbonless notebook and the student turns in a copy at the beginning of lab.

Sample of a prelab:

A

1. What is the goal of the lab? (should be about a paragraph long)
2. What is the procedure for achieving this goal? (Do not just copy the procedure, summarize the procedure in your own words.)
3. What data will you collect? Why? (What part of the goal do the data tables represent?)
4. How will you know when you have succeeded?

B

1. Study the following topics while you developing the pre lab
   1. **Topics**

The assessment of this idea is going to be a little difficult but we are looking for:

1. More insightful questions. (Not just “what do I do?”)
2. Higher quality lab performance
3. Better prepared students (not, “what lab are we doing?” or “I didn’t print the lab off, can I just look at theirs?”)
4. Better ownership of the experience (Not “Can we be done now”, or “Is that good enough?)