

Experiment Development Guide

Questions to ask when developing an experiment for the chemistry research lab.

<p>What are you trying to determine? <i>What is the question we are trying to answer?</i></p>	
<p>Why do we care? <i>What will the answer to this question tell us? Why is it important?</i></p>	
<p>Do some research. <i>A day in the library will save two weeks in the lab. Make a list of citations you found helpful.</i></p>	
<p>What instrumentation can we use? <i>Instrumentation or analysis techniques.</i></p>	
<p>How is this instrument or technique able to answer our question? <i>Here you can go into a little bit of theory as the how and why.</i></p>	
<p>Sketch it out. <i>Draw out a rough sketch of how the raw data or experimentation may look, give possible examples and use labels.</i></p>	

<p>Write out a brief procedure. Use bullet points, short hand notation, numbers, anything... just write down something. Cite articles you are basing your method on. Think about the method from start (sample prep) to end (data analysis)</p>	
<p>Pre-troubleshoot. Try to predict certain issues that may arise... this doesn't always come easy. Reflect on you method and make notes of things you may need to change.</p>	
<p>Perform the experiment. Make notes as you go through the experiment. What worked well, what didn't? Did anything go wrong? Did anything go right?</p>	
<p>Modify and retry. Was it a success? Was it a disaster? Chances are, the first time you try a new experiment it doesn't work. Modify your method and try again!</p>	
<p>Analyze your data. Scrutinize all of your data. Does it make sense? Can you compare it to something? Is it accurate? Is it precise? And what the heck does it mean?</p>	

