

Chem 12: Homemade Indicator Lab

1. Look up a recipe for a homemade acid/base indicator online.
2. Design an experimental procedure to determine the following information:
 - The K_a of the indicator
 - The pK_a of the indicator
 - The colour of the acid form of the indicator
 - The colour of the base form of the indicator
 Your procedure must include enough trials to ensure accuracy.
3. Make a testable hypothesis for your experimental procedure based on a prediction of the experimental outcome. Include stoichiometric calculations.
4. List the variables.
 - Independent variable (cause of the result)
 - Dependent variable (to be observed/measured)
 - Controlled variables
5. Gather the materials you'll need to bring to the lab. (Do any chopping or blending of ingredients before coming to the lab.)

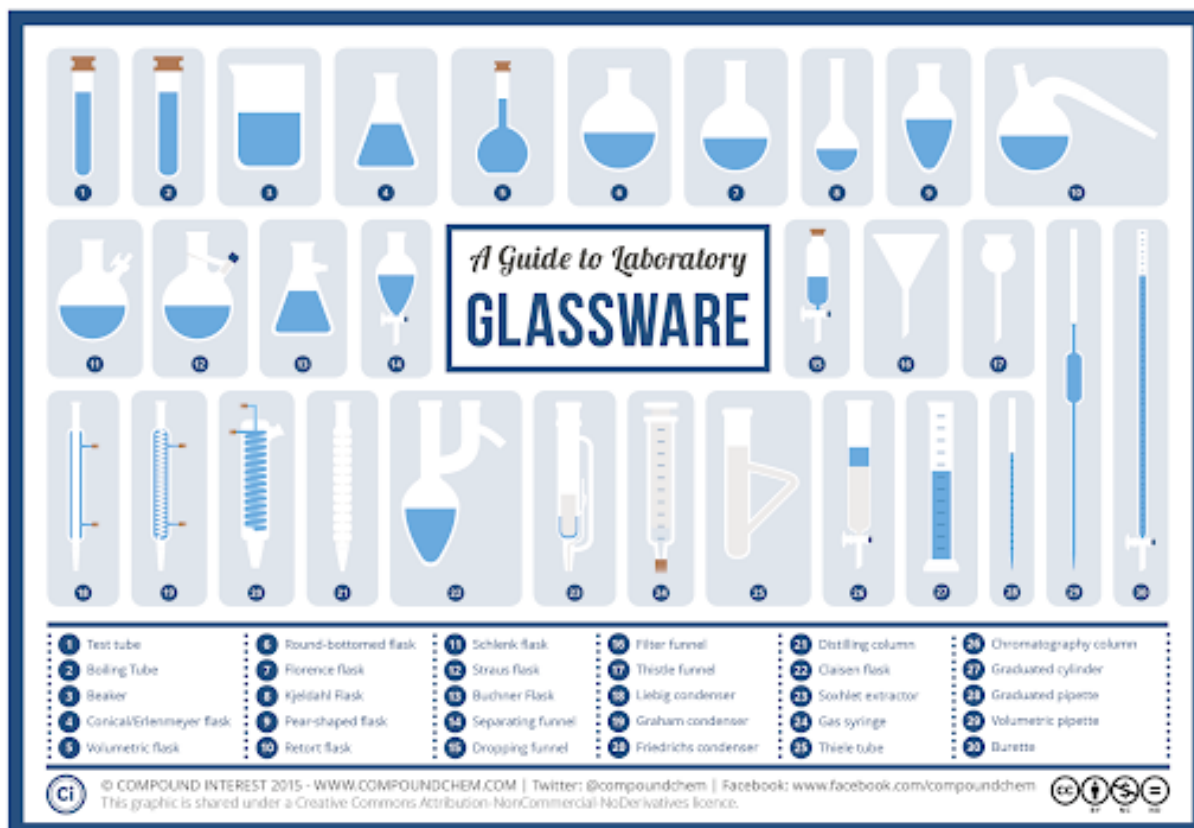
In the lab, the standard glassware, indicators, solutions, and bunsen burners will be available. It's up to you to figure out the sizes and quantities. No lab instructions will be provided. It can be difficult to get equipment on the spur of the moment, so think very carefully about the equipment you'll need for storing, mixing and transferring. **You must submit the materials list to the teacher by the Wednesday of the week before you conduct the lab.**

Name:

Block:

Equipment	Quantity	Equipment	Size	Quantity
Bunsen burner		Beaker		
Ring stand		Erlenmeyer Flask		
burette		Graduated cylinder		
Acid/base indicator Name:		Test tube		
Stir rod		HCl	Concentration:	
Dropper		Acetic Acid	Concentration:	
funnel		NaOH	Concentration:	

tongs				
Ceramic tile				



6. Note any potential safety hazards.
7. Make your indicator and conduct your experiment. Be sure to carefully document any changes to the procedure.
8. Record your observations and results in separate data tables with titles.
9. Write a lab analysis that includes the following:
 - Stoichiometric calculations.
 - Analysis of the results
 - Validity of the hypothesis
 - Analysis of the method (in terms of being a reliable test of your hypothesis)
 - Improvements to the method
 - Extensions to the lab