**Simulations for Investigation 4**

Please visit each link. Read, take notes, and perform any of the simulations. These simulations should help you prepare your procedures for Investigation 4.

Step 6:

The animations below may be useful in teaching or reviewing titration

techniques, vocabulary, or calculations prior to performing the experiment. None

of the animations are essential to the successful completion of the experiment.

■■ A simulated titration animation showing the determination of the molarity of a weak

acid (acetic acid) using a strong base:

*http://group.chem.iastate.edu/Greenbowe/sections/projectfolder/flashfiles/*

*stoichiometry/acid\_base.html*

■■ A virtual acid-base titration experiment in which the student may select the acid, base,

and indicator, and perform the experiment, including calculations:

*http://lrs.ed.uiuc.edu/students/mihyewon/chemlab\_introduction.html*

■■ A narrated animation explaining how to perform a titration:

*http://auth.mhhe.com/physsci/chemistry/animations/chang\_7e\_esp/*

*crm3s5\_5.swf*

■■ A particulate view of a neutralization reaction between HCl and NaOH:

*http://group.chem.iastate.edu/Greenbowe/sections/projectfolder/animations/*

*HClandNaOHtgV8.html*

■■ If a particulate view of the neutralization reaction between a weak acid and a strong base

is preferred to help students form a mental image of the interaction between hydronium

and hydroxide ions as the reaction proceeds, one can be found at:

*http://www.chembio.uoguelph.ca/educmat/chm19104/chemtoons/*

*chemtoons.htm*

■■ Click on “Animation 8 – Titration of a Weak Acid, HA, with a Strong Base.”