Meet the Indicator Lab

Background
Watch how to do a titration. Don’t just watch, pay attention. Take notes and rewatch parts of the video. You do not have a photographic memory.
http://www.youtube.com/watch?v=1eqVZ2EqhRc
Listen.
They’ll tell you how to mess it all up and/or fix it. Take your iPad with the video into the lab as you setup. Rewatch if you don’t remember parts.

Safety
Careful, there are some dangerous things in this lab.

Materials
HCl (some 1.0M, some 0.1M - dilute 1.0M please) NaOH (approx 0.1M)
HC₂H₃O₂ (various concentrations)
NH₃ (2 M -- MUST dilute to 0.1M if you need it)
A couple other weak acids and maybe a base
Titration equipment
Possible indicators:

1. thymol blue
2. thymolphthalein
3. bromthymol blue
4. bromphenol blue
5. congo red
6. phenol red
7. phenolphthalein
8. bromcresol green
9. alizarin yellow
10. cresol purple
11. methyl orange
12. methyl red
13. fluorescein
14. universal
15. bromcresol green
16. fuchsin, basic
17. thymol blue

Method
You will be assigned an indicator. You can choose from the materials to carry out a titration with your assigned indicator. Research what you want: use Google, your book, notes. You must perform a titration and collect titration curve data and use your indicator to attempt to “indicate” the equivalence point of the titration curve. Your indicator may not work perfectly to “indicate” the equivalence point, and that is alright, as long as you note and report this. You must take picture(s) of you performing this activity and prepare a 1.0 minute verbal presentation.

Data
At the end of the experiment you should have:
1) a titration curve you create. Provide a picture of this in full color.
2) handwritten notes and a sketch of the titration curve
3) other supporting evidence - pictures, screenshots, websites, etc.
4) a presentation. You can:
use google presentation, use a video tool
use iShowU
use screen-chomp
use some other tech tool
but if you don’t know how to use any of these technology tools, just take pictures
with your iPad and show them and show your handwritten pages on the
document camera.

**Conclusion**

You will share your findings with the class in a 1-minute presentation.

1. Introduce your new friend (the indicator) by name and chemical formula.
2. When does your indicator friend change (pH) and what colors does s/he produce -
pictures are nice, but not required.
3. What type of titration is your indicator good for (e.g., strong acid/ strong base,
weak acid/strong base, etc.). Justify your selection. Use chemistry words. Justify
your selection. Explain, in 30-seconds of immense detail.
4. At least five pictures of you and your real-life friend with the titration curve you
created. An iPad picture is fine, but make sure you visually SHOW where the
indicator “indicates” the equivalence point on a computer-collected titration curve.
POINT (literally or digitally) to this point in the picture and on the titration curve.
5. 10–15 seconds on “what makes up my new indicator friend” (e.g., chemical
structure, a Lewis dot picture of s/he, what makes them “indicate,” maybe some
of the indicator’s chemical relatives, etc.).