**Titration Graphing activity**

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| **Titration Data** |  |
| **∆VB (mL)** | **pH** |
|  |  |
| 0 | 1 |
| 5 | 1.09 |
| 10 | 1.18 |
| 15 | 1.27 |
| 20 | 1.37 |
| 25 | 1.48 |
| 30 | 1.6 |
| 35 | 1.75 |
| 40 | 1.95 |
| 45 | 2.28 |
| 50 | 7 |
| 55 | 11.7 |
| 60 | 12 |
| 65 | 12.1 |
| 70 | 12.2 |
| 75 | 12.3 |
| 80 | 12.4 |
| 85 | 12.4 |
| 90 | 12.5 |
| 95 | 12.5 |
| 100 | 12.5 |

In your lab groups, graph this data set on a white board. Your graph should be pH vs. Volume of base added. The base that was used as the titrant had a concentration of 0.100 M NaOH and 50.00 mL of HCl was used as the analyte.

1. After graphing connect your dots into a titration curve.
2. Label the equivalence point on your graph.
3. What is the concentration of the HCl that was analyzed?
4. Pick three pH values (one must be pH = 7) and draw a particle picture of the solution (what is the in flask) at each pH.

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_**

**Titrations Practice Worksheet**

*Find the requested quantities in the following problems:*

1. Write a balanced equation for the reaction between NaOH and HCl. Use this equation to answer problems 2-4
2. If it takes 54 mL of 0.1 M NaOH to neutralize 125 mL of an HCl solution, what is the concentration of the HCl?
3. If it takes 25 mL of 0.05 M HCl to neutralize 345 mL of NaOH solution, what is the concentration of the NaOH solution?
4. A 25.0 mL sample of HCl was titrated to the endpoint with 15.0 mL of 2.0 M NaOH. What is the molarity of HCl?
5. Write a balanced equation for the reaction between Ca(OH)2 and HNO3. Use this equation to answer problems 6 -8.
6. If it takes 50.0 mL of 0.5 M Ca(OH)2 solution to completely neutralize 125 mL of HNO3solution, what is the concentration of the HNO3 solution?
7. How many mL of 0.50 M HNO3 is necessary to titrate 25.0 mL of 0.05 M Ca(OH)2 solution to the endpoint?
8. If it takes 75.0 mL of 1.5 M HNO3 solution to completely neutralize 125 mL of Ca(OH)2what is the concentration of the Ca(OH)2 solution?