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| **Lesson Plan:** |

**Big Ideas**

1. Acid or base alone is different when they're mixed in water. Water acting as a weak acid/base sets pH/pOH limit even when strong acid/base is added.

**PLOs**

**E2** perform calculations relating pH, pOH, [H3O+], and [OH-]

**E3** explain the significance of the Ka and Kb equilibrium expressions

**E4** perform calculations involving Ka and Kb

**Material and equipment needed**

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| --- | --- | --- | --- | --- | --- |
| Premade HCl | Standardized NaOH | 14 burets | 14 suction bulbs | 14 volumetric pipet (10mL) | 14 buret stands and clamps |
| 14 Erlenmeyer flasks (250mL) | 28 safety goggles | White vinegar (500mLs) | Phenolphthalein solution | pre lab quiz | Simulation lab |

**Assessment Plan:**

**Formative -**

**Hook and Introduction**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 10:15 - 10:25 | * Announcements | * Lab next day * Quiz postponed * Unit test date: Mon April 14th |  |

**Development**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 10:25-10:50 | * Pre lab quiz |  | * pre lab quiz |
| 10:50-11:25 | * Computer Lab simulation | * Provide clear instructions in the beginning of the computer lab simulation * For particular concentration base, find the concentration of the acid based on how much volume was used * Remind them that moles acid = moles base * They need to print off a graph of their virtual lab * Have one copy prepared for them to see * Can work in pairs if can't log on | * Working individually |

**Closure**

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| --- | --- | --- | --- |
| **Time** | **Activity** | **Teaching notes** | **Assessment** |
| 11:25-11:35 | * Exit slip | Lab + graph  Make sure they know the difference between this lab and the lab they will do Thursday  Have partner ready for Thursday |  |