**Lesson Plan:**

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| **Lesson Topic** | Acid and Base Chemistry: pH |
| **Lesson Rationale** | This gives kids a hands on experience dealing with acids and bases and how they interact with each other. |
| **Standards** | - 11-12.C.1.2.4 Distinguish the common theories defining acids and bases.<br>- 11-12.C.1.3.6 Express concentrations of solutions in various ways including molarity<br>- 11-12.C.1.3.8 Analyze quantitative relationships involved in acid/base chemistry including pH.<br>- 11-12.C.2.1.5 Explain the relationship and reactions of acids, bases, and salts.<br>- |
| **Evidence** | Lab handout |
| **Desired Results** | 1. Classify substances as Acids or Bases.<br>2. Predict products of a neutralization reaction of a strong acid/base.<br>3. Identify acids and bases and their conjugates<br>4. Explain the difference between strong and weak acids and bases and relate their strength to their ionization equation. |
| **Learning/ Teaching Activities** | Introduction:<br><br>Entry Point: This will be a lab that helps them identify both household substances and chemicals found in the lab as acid or base.<br><br>Presentation of new information: Each new activity in the lab is preceded by a section of reading that gives them some clue as to what they are about to do. |
| **Materials Needed** | **Acid/Base Lab Equipment List**<br><br>**From Grocery Store**<br>➢ red cabbage<br>➢ lemon juice<br>➢ orange juice<br>➢ vinegar<br>➢ mineral water<br>➢ milk<br>➢ dishwashing solution<br>➢ Milk of Magnesia<br>➢ apple juice<br>➢ household ammonia |

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| **Assignment / Follow-up** | There are several follow up questions that will test their knowledge of acids, bases, and various other things that are related to the concept.<br><br>This activity will have then look at products that they use every day. Giving them some real world application and more connection to the topic as a whole. |