**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_**

**Antacid and Uncle Heartburn**

**Physical Science Lab**

**Introduction:** Have you ever had indigestion or heartburn? If so, you may have used an over-the counter antacid to relieve your symptoms. Antacids are bases that may be taken to neutralize stomach acid, primarily hydrochloric acid, HCl, and reduce the associated discomfort.

**Purpose:** To determine the relative effectiveness of three antacids

**Materials:**

* 40 drops drops of dilute HCl
* 10 drops of Brand Name Original Strength Liquid Antacid
* 10 drops of Generic Name Original Strength Liquid Antacid
* 10 drops mL of Maximum Strength Original Antacid
* 3 stirrers
* pH indicator strips
* well plate

**Procedure:** Based on your knowledge of acid-base chemistry, you should use the available materials to develop a procedure that will allow you to determine the relative effectiveness of the three antacids. You will be limited to only the materials provided. Therefore, you should develop a clear plan for your procedures before beginning the experiment.

**Write procedure below in a stepwise manner:**

**Data: Make a data table below that allows for comparison of the three antacids. Provide any information that you deem necessary.**

**Analysis Questions:**

1. **Indentify the acids and bases used in this experiment**
2. **Using the pH values observed during this experiment, provide an explanation of neutralization.**
3. **What are the reactants of a neutralization reaction?**
4. **What are the products formed in all neutralization reactions**

**Discussion Questions:**

1. **Magnesium Hydroxide, Mg(OH)2 is the active ingredient in some antacids. Hydrochloric acid, HCl, is the acid found within the stomach. How does Mg(OH)2 work to relieve the pain caused by excess stomach questions?**
2. **Provide a possible explanation as to why one antacid may be more effective than another.**
3. **Identify any possible sources of errors or uncertainty in the experiment. What could you have done to improve the activity?**