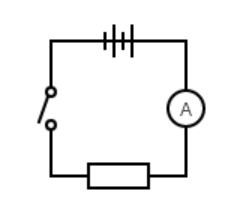
Conductivity of Acids   
**Task 11** Name:

Due: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acids and bases have applications throughout all of society. This is partly because nearly all chemicals are acidic or basic on some level, but also because of the many useful properties they have. One very common example is the use of acid as an electrolyte in many batteries.

For this task, we will explore the conductivity of various acids as a class. We will make circuits using different concentrations of different strength acids, and we will determine the relative strength of each acid.

1. Set-up a circuit using a power-pack, ammeter or multimeter, switch, and inert carbon electrodes (shown as a resistor) as shown below:
2. Place ~20mL of your acid into the beaker, and record the current. Write down the reading
3. Remove the electrodes from the first beaker and place them in the second beaker. Rinse the electrodes using distilled water.
4. Clean out the first beaker, and then place the electrodes back into it.
5. Repeat steps 2-4 for each acid, ensuring that each acid is the same concentration

After conducting the investigation, you should work-up your data in the following ways:

1. Identify the independent variables (hint: there were two), the dependent variables, and any controlled variables.
2. Complete the following results table using the whole class’s results:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 0.05M | 0.1M | 0.2M | 0.5M | 1.0M |
| Sulfuric Acid |  |  |  |  |  |
| Hydrochloric Acid |  |  |  |  |  |
| Acetic Acid |  |  |  |  |  |

1. Graph the results for each acid’s conductivity on the same set of axes.
2. Determine which acid is the strongest using your data.
3. Explain why we can use the current to determine the strongest and weakest acids.

An in-class validation will then be sat at the time indicated on SEQTA. All submissions of the data analysis received before Monday will be marked and handed back to students to help them prepare for the validation.