

OAKLAND CUSD #5

**CHEMISTRY**  
**MAY 1 1-15, 2020**

WILLIAM SEWELL

## Week: May 11 -May 15, 2020

**Teacher: William Sewell**

**Communication:** email: [william.sewell@oakland5.org](mailto:william.sewell@oakland5.org) or Google Hangout-Meet

**Office hours:** Monday and Wednesday: 12:00 to 2:00 p.m., Tuesday and Thursday: 12:00 to 1:00 p.m.

**Due Date:** All assignments are due 5/18/2020 either by sending a picture of it and turning it into Google Classroom or turning it into the office.

**Assignments:** All assignments will be in "Google Classroom" and a paper copy will be provided from the Oakland main office. I will have office hours as listed above which we can review the assignments given and I will help you as much as needed. However, the expectation is the same as it was before. I expect you to have made a serious effort to complete the assignment, before asking for help. You will not learn anything with me just giving you the answers.

Class	Choice 1	Choice 2	Choice 3 (Enrichment)
<b>Earth Science</b>	<p>Weather: For 5 straight days, do the following:</p> <ol style="list-style-type: none"> <li>1. Watch the news for the weather report.</li> <li>2. Record their prediction.</li> <li>3. Write what actually happened.</li> <li>4. Were they correct?</li> <li>5. Watch the weather report in the evening and what was their recap of that day's forecast.</li> </ol>	<p>Write down 24 things and their materials used to make them, which can either be found in your house or made from your house. Consider the following the:</p> <ol style="list-style-type: none"> <li>1. Building materials</li> <li>2. Furniture in the house</li> <li>3. Appliances</li> </ol> <p>from different parts of the house kitchen, bedroom, bathroom, etc.</p> <p>You should be turning in a two column list of: Household item and material used to make it.</p>	<p>Human Impact On Resources Please answer and respond to the following questions and statements. Make a list of five ways humans impact Earth by writing the following for each.</p> <ol style="list-style-type: none"> <li>1. State the human impact.</li> <li>2. Determine whether or not it is positive or negative.</li> <li>3. State the things which determine the degree of this impact.</li> <li>4. Is this impact permanent or temporary?</li> </ol>
<b>Pre-calculus</b>	Write down 10 different ways that you use math in your everyday life.	Write down 10 different items that require math to be made. Describe briefly how math may have been used. You can look this up.	Watch videos on sinusoidal equations and do problems. They will be assigned in Khan academy.

Class	Choice 1	Choice 2	Choice 3 (Enrichment)
<p><b>Physical Science</b></p>	<p>Reflection on Water Usage Write a paragraph about the following:</p> <ol style="list-style-type: none"> <li>1. Do you think you used too much water?</li> <li>2. What are some ways that you can reduce your water usage?</li> <li>3. Will this change make you less clean or less hydrated? How will these changes effect you?</li> </ol>	<p>Write down 24 things and their materials used to make them, which can either be found in your house or made from your house. Consider the following the:</p> <ol style="list-style-type: none"> <li>1. Building materials</li> <li>2. Furniture in the house</li> <li>3. Appliances</li> </ol> <p>from different parts of the house kitchen, bedroom, bathroom, etc.</p> <p>You should be turning in a two column list of: Household Item and material used to make it.</p>	<p>Calculate the speed of your distance ran, walked, hopped, and skipped by taking your distance and dividing it by your time for each. You should have a total of 12 speeds. 3 speeds for all 4 activities.</p>
<p><b>Chemistry</b></p>	<p>Consider what elements are used to make up the things in the area around you (either in or outside your house). Write it down and what you think it is made of for at least 20 items. You should have a two column list of: item and element.</p>	<p>Consider the compounds or mixtures that makeup the things in or out of your house. Write down at least 15. Read labels if you must. Identify if those things are mixtures or compounds. Remember a mixture can, typically, be separated by physical means. A compounds can only be separated by a chemical means. Those things that makeup a compound are bonded together, but a mixture has not been. Think of the difference between baking a cake and what you need for it versus putting icing on it. Or the chocolate chips in the cookie versus the flour, or sugar in it.</p>	<p>Do Empirical Formula Lab WS by watching video and pictures of lab.</p>

### Introduction

In this experiment, a measured amount of zinc will be allowed to react with hydrochloric acid, HCl. One of the reaction products will be zinc chloride. You will obtain data that will enable you to determine the empirical formula of zinc chloride,  $Zn_xCl_y$ . Empirical means "based on experimental evidence".

### Procedure - Day 1

1. Find the mass of a clean, dry, labeled beaker (to the nearest 0.01g)
2. Add the number of zinc pieces as instructed by your teacher. Find the mass of the beaker and zinc to the nearest 0.01g.
3. Add 50 mL of 3M HCl. Record your observations.
4. Place your labeled beaker on one of the hot plates in the fume hood.

### Procedure - Day 2

5. Set up a bunsen burner, ring stand, ring and wire screen so you can heat the beaker.
6. Zinc chloride absorbs water readily from the air. In order to remove the water, heat the beaker and contents for a minute or two. As long as the contents appear to bubble, water is evaporating. However, when the contents begin to smoke, stop heating *immediately*. Remove the beaker (use tongs, it's hot) and allow it to cool on the metal base of the ring stand. Note how the zinc chloride solidifies from the molten state.
7. When the beaker is cool enough to handle, find the mass of the beaker and zinc chloride. (1)
8. Repeat steps 6 and 7. (2)
  - a. If this second mass is more than 0.02g lighter than the previous mass, repeat steps 6 and 7 once more. (3, if needed)
  - b. If the mass is unchanged, wash out the contents of the beaker as instructed by your teacher.

### Data

Mass of labeled beaker \_\_\_\_\_ g

Mass of beaker + zinc \_\_\_\_\_ g

Mass of beaker + zinc chloride (1) \_\_\_\_\_ g

Mass of beaker + zinc chloride (2) \_\_\_\_\_ g

Mass of beaker + zinc chloride (3, if needed) \_\_\_\_\_ g

Observations

## Calculations

1. Determine the mass of zinc reacted.
2. Determine the mass of zinc chloride (guess which one you should use).
3. Determine the mass of chlorine in the zinc chloride.
4. Determine the number of moles of zinc, then the number of moles of chlorine.
5. Determine the ratio:  $\frac{\text{moles Cl}}{\text{moles Zn}}$

## Conclusion

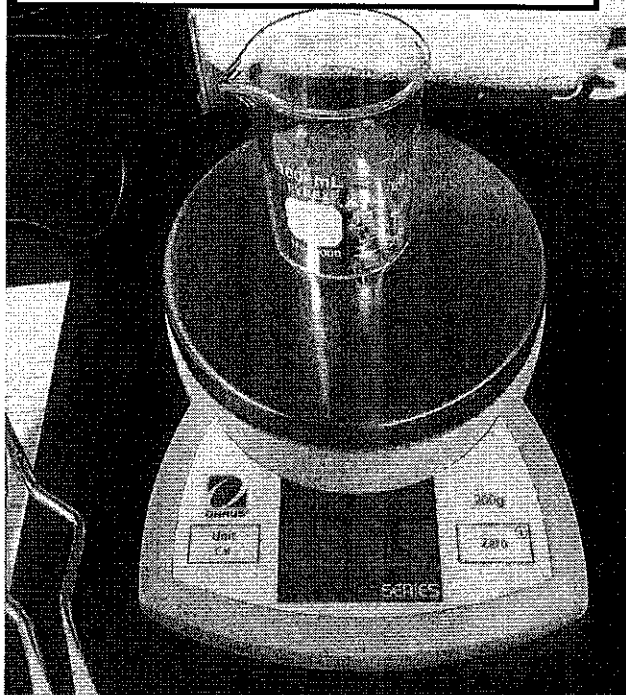
1. Since you believe that atoms combine in simple, whole-number ratios, what do you think is the likely ratio:  $\frac{\text{atoms Cl}}{\text{atoms Zn}}$  ?
2. Based on your findings, what is the empirical formula of zinc chloride?
3. Suppose that you had not driven off all the water from the zinc chloride. How would this error have affected the ratio in calculation 5? Show evidence for your prediction by repeating calculations 2 – 5 using the next to the last value for the mass of the beaker and zinc chloride.

# Empirical Formula Lab

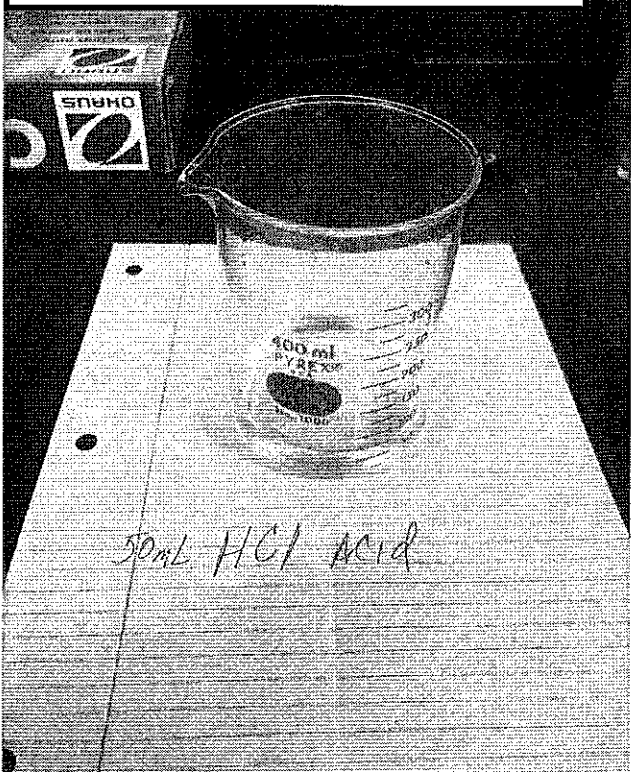
Procedure-Day 1 Question #1



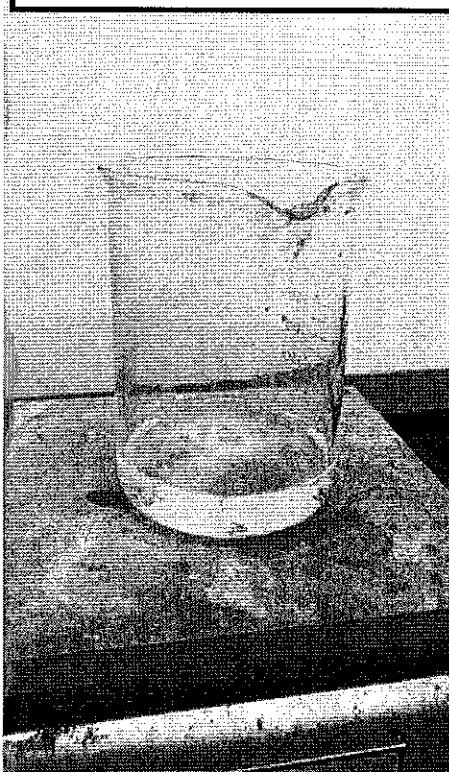
Procedure-Day 1 Question #2



Procedure-Day 1 Question #3

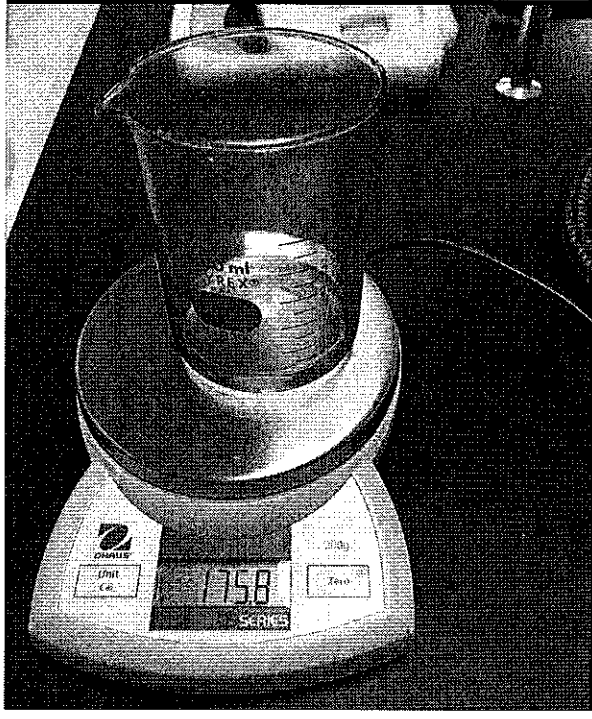


Procedure-Day 1 Question #4



# Empirical Formula Lab

Procedure-Day 2 Question #7



Procedure-Day 2 Question #8

