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Lab Report 1

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Purpose: To understand how to collect data between pH levels and their acidity, measurements of cm and mm on a ruler, how to calculate time between hours to minutes to seconds. We are also expected to know the conversions of various factors of the metric system.

Procedure: first we collected data by measuring our lab manuals with a ruler by height, width, and length. Then we are to convert the mm to cm by multiplying by 0.1. Then we measured the volume by pouring water into a beaker and then into a graduated cylinder. We then convert the ml to l by multiplying by 0.001. Then we measured mass by using a beaker on a weight and used the measurement of mg and then convert to g. Then we measured water in a beaker by zeroing out the beaker when initially putting it on the weight. Then we measured PH by using test strips on three different solutions and depending on the color, we decide what the acidity level is of each solution. Then we measure time by measuring our heart beats per minute to seconds after a specific amount of time.

Results:

MEASUREMENT REVIEW - DATA COLLECTION

Linear Measurements

- 24.51 mm  $\frac{0.1 \text{ cm}}{1 \text{ mm}} =$   
17.71  
0.62
1. State the length of your lecture text: 24.51 mm 2.45 cm
  2. State the width of your lecture text: 17.71 mm 1.78 cm
  3. State the depth of your lecture text: 0.62 mm 0.062 cm

Volume Measurements

1. Pour some water in the beaker and state the volume:  
50 ml 0.05 liters (l)  $50 \text{ ml} \frac{0.001 \text{ L}}{1 \text{ ml}} = 0.05 \text{ L}$
2. Pour the water from the beaker into a graduated cylinder and state the volume:  
36.1 ml 0.0361 liters

Mass Measurements

1. State the mass of the weight: 112.860 mg 112.86 g  $\frac{1 \text{ kg}}{0.001 \text{ g}} =$
2. Pour some water into the beaker and state the mass of the liquid in the beaker:  
37,270 mg 37.27 g  $\frac{1 \text{ kg}}{0.001 \text{ g}} =$

pH Measurements

1. State the pH of the liquid in container "A": 3 increasingly acidic
2. State the pH of the liquid in container "B": 6 neutral
3. State the pH of the liquid in container "C": 9 increasingly basic

Time Measurements

1. Determine your pulse rate after 15 seconds: 1.5 beats/second  
90 beats/minute
2. Determine your pulse rate after 60 seconds: 70 beats/minute  
1.17 beats/second  
1,170 beats/millisecond  
 $\frac{1 \text{ min}}{60 \text{ beats}} \frac{60 \text{ sec}}{1 \text{ min}} = 1.5$   
 $1.17 \text{ sec} \frac{1 \text{ millisecond}}{0.001 \text{ sec}} = 1,170$

Discussion: I felt more comfortable doing the conversions as I took chemistry for the summer, and it was still fresh in my mind how to do each one. The PH strips was fun to do because I've never checked for Ph levels before, but I have always seen them at work and at home, just never knew how to use and read the measurements. I had a bit of confusion with the beats per minute because I used my watch to measure my beats which came in minutes, so I just divided by 60 to get the beat per second. As for measuring my lecture text I didn't have a physical book on me so I measured my iPad instead.

Conclusion: I was able to refresh my knowledge of conversions and apply it to this lab. I found it good practice as well as I will be expected some sort of use for conversions for measurements.