Lab Report 1- Physiological Instruments

Purpose:

The purpose is to learn different types of measurements. Understanding the basic metric units of measurement and the prefixes of each unit. Learn how conversion works.

Procedure:

For linear measurements we used the mm side of a ruler to measure the length, width and depth of our notebook. Then using the ratio of 10mm= 1cm we converted the measurement unit to cm.

To find volume measurements we first poured water into a beaker and wrote the volume in ml then converted it into L using 1000 ml= 1 L ratio. Then we poured the water from the beaker into a graduated cylinder and stated the volume in ml and L.

Using the scale, we found the mass of our pencils given in grams then converted it into mg with 1000 mg= 1 g ration. We then found the mass of the liquid in the beaker by first weighing the beaker itself then weighing the beaker with the water then subtracting the mass of the beaker from (beaker + water), leaving us with the water mass.

To find pH measurements we added liquid A to a container, Liquid B to a second container and liquid C to a third container. We used pH test trips to measure each liquid and matched the color of strip to the acidic or basic color on the tester.

For time measurements we counted our pulse after 15 seconds and determined the beats per second and then the beats per minute. Then we counted our pulse after 60 seconds and the beats per millisecond by dividing the seconds by 1000 to follow the 1 sec= 1000 milliseconds ratio.

Result:

Notebook measurements

- length 28mm 2.8cm
- Width 23.3mm 2.33cm
- Depth 0.9mm 0.09cm

Volume measurements:

Water in beaker

- 25 ml 0.025L

Water in graduated cylinder

- 21ml 0.021L

Mass Measurements:

Weight of pencil

- 14,050mg 14.05g

Mass of liquid in beaker

- 19,370mg 19.37g

PH measurements:

- “A” 2 acidic
- “B” 6 neutral
- “C” 10 basic

Time Measurements:

After 15 sec

- 1.33 beats/sec
- 80 beats/min

After 60 sec

- 1.33 beats/sec
- 0.00133 beats/millisecond

Discussion: For volume measurement the volume on the beaker is not as accurate as in the graduated cylinder. It stated that there was more than there actually was.

Conclusion: we found how to use conversions of the basic metric units of meaure to find length, mass, volume, time and pH.