

Name _____

Mr. Leacock

Date _____

Laboratory 1 Measuring using a Vernier Caliper

Objectives

1. To learn how to use a device for measuring small distances (Vernier caliper).
2. To learn how to properly use a mass balance
3. To solve a problem in three-dimensional measurement

Procedure

You are to find the density of several different objects. It will be necessary to find out the volume of the object by measuring its length, width and height. A triple beam balance will be used to find the mass of the

object. You will find the density of the object using the following:

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

During most of this course you will be measuring using kilograms and meters, but for this laboratory use mass in grams and lengths in centimeters. Include units in your data table (for example, you would indicate twelve grams as 12.0 g, not just 12). Not all the spaces in the chart will be filled, for example, a block has no radius.

Object	Description	Length	Width	Height	Radius	Mass	Volume	Density
1								
2								
3								
4								
5								

Show all work below on the back of this page or a separate sheet of paper.

Questions

1. Using the table below, fill in the table from least dense to most dense, writing the description of the material and its density.

Low density

High density

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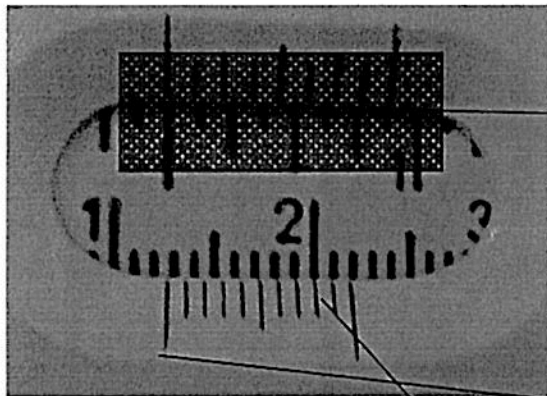
2. If the density of water is 1.00g/cm³, why do the densities above make sense?



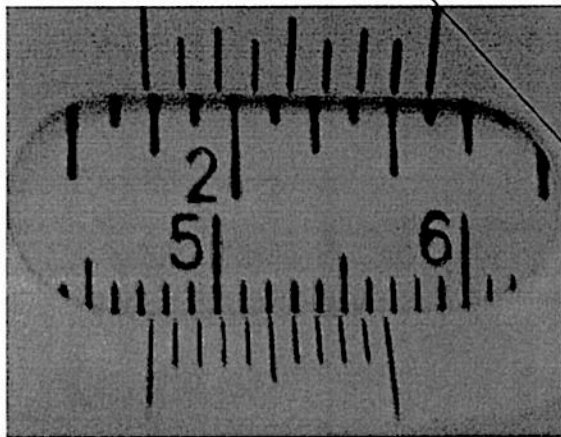
How to use the vernier caliper.

Do not use a great deal of pressure closing the caliper. If yours has a friction thumb, use it so you don't clamp down too hard.

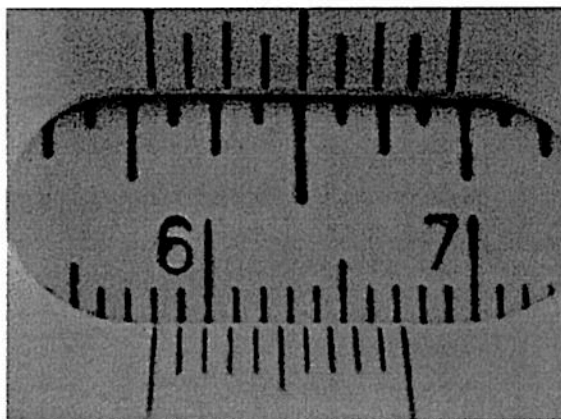
Reading the caliper



Ignore the upper scale, it is in the English system.



This is the coarse pointer; it tells you that that measurement is 1.2? cm.



Notice that the eighth marking on the lower scale aligns with the upper scale. This tells you that the total measurement is 1.28 cm.